

# THE ONTARIO COLLEGES OF APPLIED ARTS AND TECHNOLOGY

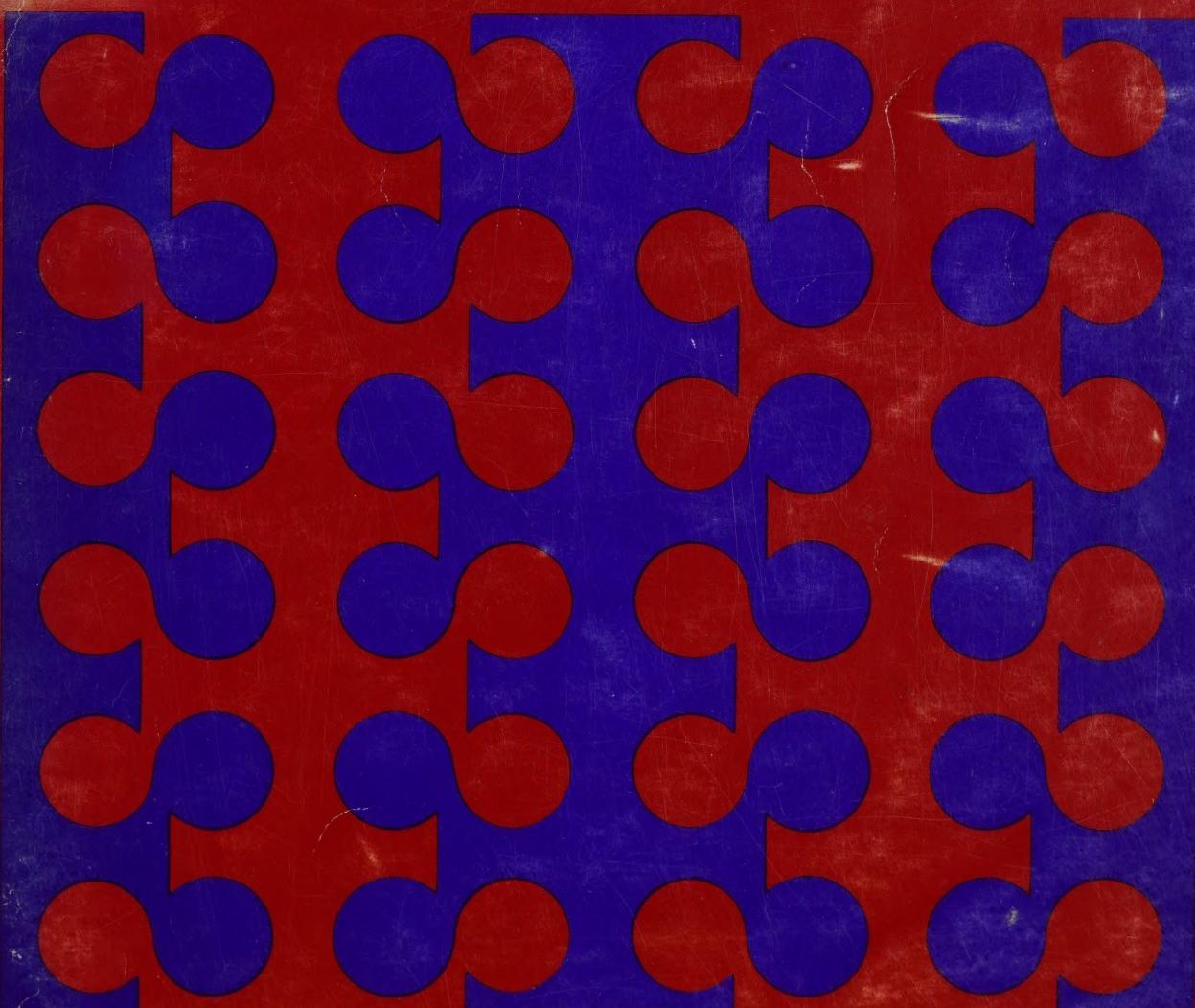
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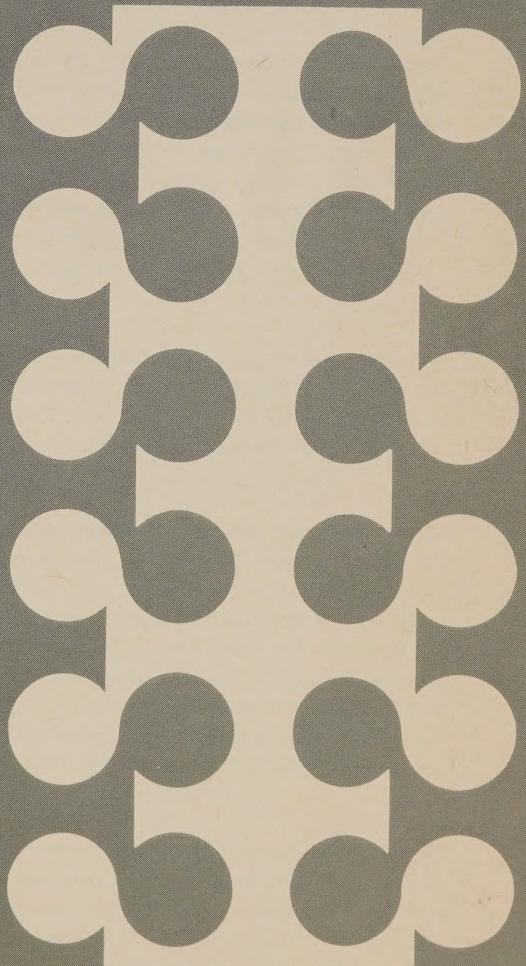
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THE ONTARIO  
COLLEGES OF  
APPLIED ARTS  
AND TECHNOLOGY

Government  
Publications

A Study Prepared for the Commission  
on Post-Secondary Education in Ontario



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## The Ontario Colleges of Applied Arts and Technology

### Editorial Foreword

The creation since 1965 of 20 colleges of applied arts and technology reflects one of the most dramatic developments in recent educational policy in Ontario. The network of CAATs which now stretches across the province has greatly broadened the range of educational opportunities available to Ontario youth. Some of these colleges have absorbed existing technological institutes and trade schools, but the majority have been established as entirely new entities.

The Commission was required by its terms of reference to consider the "general pattern necessary to ensure the further effective development of post-secondary education in the province" and, more particularly, "the type, nature and role of the institutions required to meet the educational needs of the province. . . ."

Throughout its deliberations the Commission has attached great importance to the contributions these institutions can make to education in this province.

Several of the background studies prepared for the Commission relate to the whole set of post-secondary institutions in Ontario of which the CAATs are a part, and several of these studies provide specific material which bears more directly on the colleges. In particular, the reader's attention is directed to the Commission's two regional studies, *Post-Secondary Education in Northwestern Ontario* and *Post-Secondary Education in North Bay and Sault Ste. Marie*. These, together with the present volume, should be consulted by any reader seriously interested in the problems of colleges in relation to the broad spectrum of post-secondary education in Ontario.

The present study had its origins in the Commission's wish to assemble relevant, up-to-date information about the Ontario colleges of applied arts and technology as they exist today and to survey the emerging and future roles which could be foreseen for them. The second part of the undertaking proved difficult, for the CAATs are only now beginning to evolve as identifiable entities.

Under the circumstances it was evident that it would be desirable either to commission several background studies on this topic, reflecting different points of view concerning the appropriate roles for the CAATs, or, alternatively, a large study surveying the whole range of such views and possible sets of futures that would be implied by them. Such an approach was not feasible, however, not only because of the time limits within which the work had to be done, but also because it would have involved duplication of a great deal of other work which happened to be under way on the same topic—notably that being done by C. Watson at Ontario Institute for Studies in Education and by G. Campbell for his recently published study *Community Colleges in Canada* (see bibliography in this volume).

The Commission subsequently decided to have prepared a limited background study on the Ontario CAATs, assembling presently available data and providing a particular assessment of how well the colleges were realizing their original purposes. The contract for such a study was awarded in June 1971 on a competitive tendering

## Foreword

The purpose of this study is to provide a brief overview of the current and future role of the CAATs--the programs offered, the students served, the administrative procedures and financial arrangements. It is not the intention to duplicate the recent works in this area by Dr. C. Watson of OISE and Professor S. Campbell (see bibliography for references). It is hoped that this research report will contribute to a fuller understanding of the system of post-secondary education in Ontario and, particularly, the unique role played by the Colleges of Applied Arts and Technology.

## SUMMARY AND CONCLUSIONS

In 1967, 20 colleges of Applied Arts and Technology were established:

- (1) to provide courses of types and levels beyond, or not suited to, the secondary-school setting;
- (2) to meet the needs of graduates from any secondary-school program, apart from those wishing to attend university, and
- (3) to meet the educational needs of adults and out-of-school youth, whether or not they are secondary-school graduates.

The growth of the Colleges of Applied Arts and Technology (CAATs) has been rapid from 11,000 post-secondary students in 1967 to 30,000 in 1971. Enrolment is expected to grow to 75,000 within the next decade. In addition to serving post-secondary students, the CAATs serve a great number of students in retraining programs, apprenticeship programs, and general interest courses. The CAATs are successful in the provision of a wide range of educational services to the communities in which they are located.

The purpose of the report is first of all to describe the CAATs as they are today in terms of their programs, their students, their staff and administrative systems and, secondly, to make suggestions for the future. Following is a brief summary of the suggestions.

Program Structure

1. The CAATs are providing new and alternative programs to those traditionally offered by universities. In doing so, the CAATs provide a meaningful education to a large segment of Ontario's youth who do not aspire to a university degree. It is our opinion that the establishment of transfer programs, whose sole purpose is to prepare students for eventual transfer to universities, would destroy the unique character of the CAATs and negate the contribution they are making to this province.
2. The establishment of graduate program for the CAATs should be studied further. Perhaps the Ryerson Institute should be designated as a possible graduate school of Applied Arts and Technology.
3. The post-secondary, retraining, apprenticeship, and training in business and industry programs should be integrated and their supervision and administration brought under the divisional chairman in applied arts, business, and technology.

The CAATs and the Universities

1. Since the universities and colleges in Ontario are each fulfilling unique roles in the total spectrum of post-secondary education, they should be administered as two separate and distinct systems.
2. A Commission of higher education should be established with

equal representation from the universities, colleges and private post-secondary institutions to ensure a co-ordinated and balanced development of all aspects of post-secondary education in Ontario.

Administration in the CAATs

1. There should be a periodic revision of the formula financing scheme to ensure that the weighting factors do not have an undue influence on the internal resource allocation process of the colleges. This review should be integrated with the annual review of the multi-year plan.
2. The funding of the various types of programs offered by the CAATs should be integrated, probably through a formula that is based on the contact hour concept.
3. In order to facilitate financial planning and management the CAATs should be allowed to redefine the fiscal year to run concurrently with the academic year.
4. It is suggested that the CAATs not be required to keep separate books to account for expenditures in each of the major program areas. The financing of all CAAT programs should be integrated at the level of the Applied Arts and Technology Branch.
5. The program approval process and the capital project approval process should be integrated with the annual review of

-iv-

the multi-year plan. Only in the context of a well-thought-out multi-year plan can requests for program approval or capital projects be properly evaluated.

## CHAPTER I

### HISTORY AND OBJECTIVES OF THE COLLEGES OF APPLIED ARTS AND TECHNOLOGY IN ONTARIO

#### A. Introduction

Following the passage of legislation in 1965,<sup>1</sup> 20 colleges of a distinct type have been established in Ontario. Local boards of governors were given power and funds to set up Colleges of Applied Arts and Technology and are now responsible for the financial administration of the colleges. The system of colleges was planned and launched in an astonishingly short time. Although the colleges are similar they are not identical: each has different origins and each has been influenced by the styles and conceptions of its founders.

Part of the rationale for the colleges was to make post-secondary, vocationally oriented education more widely available in Ontario. This policy is reflected in the location of the colleges throughout the province. Some colleges have more than one campus. Although areas were established for each college for the purposes of administration, there are no restrictions on what area a student may come from. Following is a detailed listing of all colleges, their main locations, their origin, their geographic location (page 3) and the areas which each college is intended to serve (pages 4-5).

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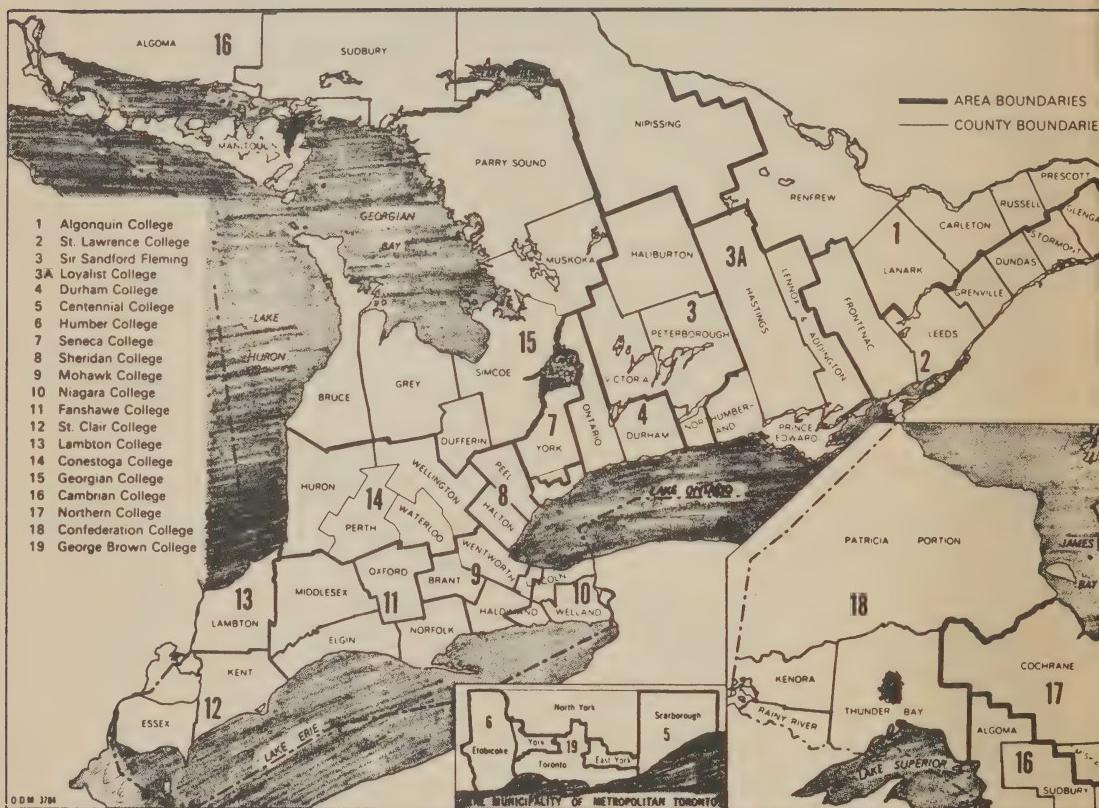
An Act to Amend the Department of Education Act.  
3rd session, 27th legislature, Ontario, 13-14 Elizabeth II,  
1965.

<u>College</u>	<u>Main Locations</u>	<u>Origin</u>
Algonquin	Ottawa Pembroke	Includes former Eastern Ontario Institute of Technology, Ontario Vocational Centre (Ottawa) and the Forestry School at Pembroke
Cambrian	Sudbury North Bay Sault Ste Marie	New college Ontario Vocational Centre (Sault St. Marie)
Centennial	Boroughs of Scarborough and East York	Includes former Transportation and Industrial Power Technology School
Conestoga	Kitchener	Includes former Ontario Vocational Centre
Confederation	Thunder Bay	Incorporates former Lakehead Technical Institute
Durham	Oshawa	New college
Fanshawe	London	Incorporates former Ontario Vocational Centre
George Brown	Toronto (Central city)	Includes two former provincial institutes of trade
Georgian	Barrie	New college
Humber	Boroughs of Etobicoke and York	Three campuses
Lambton	Sarnia	New college
Loyalist	Belleville	New college
Mohawk	Hamilton	Two campuses. Incorporates earlier provincial institute of textiles and more recently the Hamilton Institute of Technology
Niagara	Welland	Includes School of Horticulture in Niagara Falls

<u>College</u>	<u>Main Locations</u>	<u>Origin</u>
Northern	Timmins, Kirkland Lake, Haileybury South Porcupine	Incorporates former Northern Institute of Technology at Kirkland Lake and Haileybury School of Mines
St. Clair	Windsor	Incorporates Western Ontario Institute of Technology
St. Lawrence	Kingston, Brockville Cornwall	New college
Seneca	Borough of North York and County of York	Three campuses New college
Sheridan	Oakville Brampton	Includes the School of Design in Lorne Park and the Heavy Equipment School in Milton
S.S. Fleming	Peterborough	Includes Forestry School at Lindsay

FIGURE 1

## Colleges of Applied Arts and Technology • Areas<sup>2</sup>



<sup>2</sup> Applied Arts and Technology Branch, Programs 71/72, CAAT Chart Number 5, February 1971.

**ONTARIO COLLEGES  
OF APPLIED ARTS AND TECHNOLOGY  
COLLEGE AREAS<sup>3</sup>**

Area 1 - Algonquin College  
 to serve all the municipalities,  
 including any cities or separated  
 towns, within the counties of  
 Renfrew  
 Lanark  
 Carleton  
 Russell  
 Prescott

Area 2 - St. Lawrence College  
 to serve all the municipalities,  
 including any cities or separated  
 towns, within the counties of  
 Frontenac  
 Leeds  
 Grenville  
 Dundas  
 Stormont  
 Glengarry

Area 3 - Sir Sandford Fleming  
College  
 to serve all the municipalities,  
 including any cities or separated  
 towns, within the counties of  
 Northumberland  
 Peterborough  
 Haliburton  
 Victoria

Area 3A - Loyalist College  
 to serve all municipalities,  
 including any cities or separated  
 towns, within the counties of  
 Lennox and Addington  
 Hastings  
 Prince Edward  
 Northumberland

Area 4 - Durham College  
 to serve all the municipalities,  
 including any cities or separated  
 towns, within the counties of  
 Ontario  
 Durham

Area 5 - Centennial College  
 to serve the municipalities  
 of  
 The Township of Scarborough  
 The Township of East York  
 and  
 The Town of Leaside

Area 6 - Humber College  
 to serve the municipalities  
 of  
 The Township of Etobicoke  
 The Township of York  
 and the Towns of Mimico,  
 New Toronto, and Weston and  
 the Village of Long Branch

Area 7 - Seneca College  
 to serve the Township of  
 North York and all the  
 municipalities within the  
 County of York that do not  
 form part of the present  
 Metropolitan Toronto area

Area 8 - Sheridan College  
 to serve all the municipalities,  
 including any cities  
 or separated towns, within  
 the counties of  
 Peel  
 Halton

Area 9 - Mohawk College  
 to serve all the municipalities,  
 including any cities  
 or separated towns, within  
 the counties of  
 Wentworth  
 Brant  
 and the Townships of Oneida,  
 Seneca, N. Cayuga, Walpole,  
 and Rainham in the County  
 of Haldimand and any urban  
 municipalities within the  
 boundaries of those

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<sup>3</sup> Ontario Department of Education, Colleges of Applied Arts and Technology: Basic Documents, June 1967. p.17-19.  
 (hereafter referred to as Basic Documents).

ONTARIO COLLEGES  
OF APPLIED ARTS AND TECHNOLOGY  
COLLEGE AREAS

townships and the townships of N. Grimsby, S. Grimsby, and Caistor in the County of Lincoln and any urban municipalities within the boundaries of those townships

Area 10 - Niagara College  
to serve all the municipalities, including any cities or separated towns, within the county of Welland and the Townships of Niagara, Grantham, Louth, Clinton, and Gainsborough in the County of Lincoln and any urban municipalities within the boundaries of those townships and the Townships of Moulton, Sherbrooke, Dunn, Canborough, and S. Cayuga in the County of Haldimand and any urban municipalities within the boundaries of those townships

Area 11- Fanshawe College  
to serve all the municipalities, including any cities or separated towns, within the counties of Middlesex  
Elgin  
Norfolk  
Oxford

Area 12 - St. Clair College  
to serve all the municipalities, including any cities or separated towns, within the counties of Essex  
Kent

Area 13 - Lambton College  
to serve all the municipalities, including any cities or separated towns, within the county of Lambton

Area 14 - Conestoga College  
to serve all the municipalities, including any cities or separated towns, within the counties of Huron  
Perth  
Waterloo  
Wellington

Area 15 - Georgian College  
to serve all the municipalities, including any cities or separated towns, within the counties of Bruce  
Grey  
Dufferin  
Simcoe and the districts of Muskoka  
Parry Sound

Area 16 - Cambrian College  
to serve all the municipalities, including any cities or separated towns, within the districts of Algoma  
Manitoulin  
Sudbury  
Nipissing

Area 17 - Northern College  
to serve all the municipalities, including any cities or separated towns, within the districts of Cochrane  
Timiskaming

Area 18 - Confederation College  
to serve all the municipalities, including any cities or separated towns, within the districts of Kenora  
Rainy River  
Thunder Bay

ONTARIO COLLEGES  
OF APPLIED ARTS AND TECHNOLOGY  
COLLEGE AREAS

Area 19 - George Brown College  
established by an Order-in-Council  
of July 14, 1966, to serve the  
City of Toronto  
the Village of Forest Hill  
the Village of Swansea

B. History of the CAATs

Technical education beyond the secondary-school level was originally introduced in Ontario as a direct result of the rapid industrialization of Ontario during World War II. The provincial technical institutes which were then established were essentially senior technical schools extending secondary education to Grades XII, XIV, and, in some programs, Grade XV. These technical institutes were operated directly by the provincial Department of Education.

During the 1950s, there were two types of provincial technical institutes in Ontario. Institutes of Technology offered three-year programs in technology and business administration for full-time students, mostly male, who were recent secondary-school graduates. The second type of provincial technical institute was the Institute of Trade. These institutes were developed in the first instance to provide the in-school part of the training required by apprentices registered by the Ontario Department of Labour. The first students in the Institute of Trade were therefore all sponsored students sent by the Department of Labour.

The orderly expansion of the technical institutes during the 1950s and early 1960s met the requirements for post-secondary technical and business education very effectively. Ontario had had an established secondary-school system up to the senior matriculation level of over 100 years standing and had had vocational education at the secondary school level for over 40

years. However, the events of the early 1960s made it impossible for a centrally administered system of provincial technical institutes, the vocational centres, and the secondary-school system to keep up with the sudden public demand for access to further education.

Three factors set forth by the Hon. John Robarts, then premier of Ontario, before the legislature in February 1965, had to be considered in regard to their impact on education demand. In summary these factors were the current "knowledge explosion" and the "inevitability of some form of post-secondary education for all capable of profiting from it"; secondly, technical growth and the resulting need for higher levels of skills and knowledge in a highly industrialized province; and thirdly, the population growth which was engulfing and would continue to engulf the secondary and post-secondary institutes.

In Canada, the Technical and Vocational Training Act suddenly made huge sums of capital available for expanding facilities for technical and vocational education in the provinces. The newly reorganized secondary-school program gave the Grade IX student a choice between the traditional academic program leading to Grade XIII and university admission, and a less rigorous program which led to a secondary-school graduation diploma at the end of four years. This four-year stream allowed students who would have been drop-outs in the more rigorous traditional academic program to attain a graduation diploma to mark their achievements. This diploma was originally intended

to be terminal. Graduates would--according to the plan--enter the labour market after Grade XII.

By 1965, as the first students of this four-year stream were approaching the termination of their education, it was realized that the educational alternatives in Ontario were not adequate to serve the public. Premier Robarts made the following statement: "It is the task and purpose of this government to provide whatever opportunities are necessary to enable each individual, through education, to develop his potentialities to the fullest degree, to employ his talents to the greatest advantage, and we plan to accomplish this through free choice, not by coercion and regimentation of our fellow-citizens".<sup>4</sup> On May 21, 1965 the Hon. William G. Davis endorsed the assessment made of the educational needs of Ontario youth by the Grade XIII Study Committee, 1964. "It is not feasible, nor indeed desirable, that all our graduates of our high schools should go to university. The real needs of a very substantial number of our young people lie elsewhere....We must turn our attention to a new kind of institution that will provide...a type of training which universities are not designed to cover....A beginning has been made in the establishment of the institutes of technology and vocational centres....The committee is therefore recommending the establishment of community colleges to provide these new and alternative programs."<sup>5</sup>

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<sup>4</sup> Legislature of Ontario, Debates, February 23, 1965,

<sup>5</sup> Basic Documents, 11.

Ontario was by then committed to providing open access to further education for all who desired the opportunity. In spite of the rapid expansion during the first half of the 1960s, Ontario's 14 provincially assisted universities could not cope with such a policy of universal accessibility, nor was university education necessarily the answer to "providing opportunities to enable each individual to develop his potential to the fullest degree." One solution might have been to establish American-style junior colleges, which operate with an open-to-all policy. Approximately 70 per cent of the students are eventually screened out within a two-year period, thereby keeping the pressure off the state universities.<sup>6</sup> This was not to be the intention of the Ontario system. Ontario chose to establish its system of colleges as a viable alternative to universities. They were purposefully named "Colleges of Applied Arts and Technology" to distinguish them from American community colleges. However, since all Ontario universities accept CAAT graduates who have better than average standing and suitable credits for admission, no program offered by a CAAT is, in actual fact, terminal.

One notable feature of the Ontario CAATs, and one of the original conceptions, is that the colleges are composite or comprehensive institutions where educational emphasis varies from community to community, as local needs dictate.

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<sup>6</sup> For a good general introduction to American Community Colleges see Eric Ashby, Any Person, Any Study (New York, McGraw-Hill, 1971).

C. Aims and Objectives of the CAATs

The basic mission and responsibilities of the Colleges of Applied Arts and Technology, as articulated by the Minister's introduction to the 1965 Amendment Act for establishing these colleges, have been defined as follows:<sup>7</sup>

1. To provide courses of types and levels beyond, or not suited to, the secondary-school setting.
2. To meet the needs of graduates from any secondary-school program, apart from those wishing to attend university.
3. To meet the educational needs of adults and out-of-school youth, whether or not they are secondary-school graduates.

Within the formalized framework of the basic educational missions established for the CAATs, the following set of more specifically stated objectives--both in terms of the orientation of programs to be offered and their expected socio-economic impact--are recognized to be applicable to the CAATs.<sup>8</sup>

a) Programs and Services

The main focus of the programs offered by the colleges should be on enhancing the socio-economic mobility of the student and his potential contribution to the general productivity of human resources in the college regions.

<sup>7</sup> Basic Documents, 13.

<sup>8</sup> This statement of objectives was extracted from a set of guidelines offered to the colleges to assist them in the preparation of multi-year plans (unpublished).

As a means of achieving the above objective, the colleges should strive toward maintaining a sound and effective balance among the following goals in their educational planning:

- i) Establishing programs of study which will be applied in nature: i.e. oriented toward meeting the unique and dynamic demands of future technologies, occupations, and communities.
- ii) Establishing a climate conducive to adult learning.
- iii) Offering programs which are directed toward full development of students to the limit of their abilities, so that they may more adequately prepare themselves for the demands of their vocation.
- iv) Offering unique services and programs to all members of the community to benefit them in the advancement of their vocational, recreational, or cultural role in society.
- v) Interacting with representatives of business and industry, professional and licensing associations, social and public agencies and other colleges and continuing educational centres of the area for enhancing the quality, relevance and social effectiveness of the college programs and services.
- vi) Co-operating with all groups in an effort to establish the college campus as a centre of community life and progressive development in keeping with the college's basic philosophy and missions.

b) Students

The contents, scope, and orientation of the programs offered by the colleges should be primarily aimed at meeting the needs and aspirations of the following groups of students:

- i) Young adults (Grade-XII graduates) who look to the colleges for courses that will lead to their employment in professional and para-professional fields.
- ii) Adults who seek a new start in a new vocation.
- iii) Young adults in apprenticeship programs or other training programs in business or industry who look to the college to supplement that training.<sup>9</sup>
- iv) People who look to the college to help them update or upgrade their vocational skills.<sup>10</sup>
- v) People who seek help to improve their ability in the use of a second language.
- vi) People who will take courses for vocational purposes.
- vii) People who will take courses for avocational purposes.

c) Learning Environment and Resources

- i) Teachers, librarians, and other staff members involved in education should serve more as "learning facilitators" for instilling in the student an enduring habit of initiative, self-inquiry, creativity, and efficient research methods in his academic and professional field.

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<sup>9</sup> Under the Apprenticeship Act.

<sup>10</sup> Under the Occupational Training of Adults Act.

- ii) Part-time teachers, drawn from various fields of endeavour, can and should be attracted to the colleges as a means of providing constant relevance to "applied" learning.
- iii) There is little doubt that, in the future, the standard educational buildings of today will and should serve primarily as resource centres. The academic planners, and the designers of the future educational buildings, would therefore have to recognize that:
  - Our economy can hardly continue to support the cost of an educational plant of the magnitude attained over the last few years.
  - Students are dissatisfied with being nameless faces in large lecture theatres: they learn better in small groups.
  - Students are "media oriented," particularly in the younger age bracket of the post-secondary group.
  - The technological revolution over the last few years has made many advances in the field of educational plant design and planning.
- iv) To meet the needs of those areas where commuting to college is not possible because of distance or climatic conditions, student residences should be provided. Such residences become part of the learning environment.

- v) The technological revolution has made many improvements and innovations in the field of information storage, retrieval, and transfer. In view of this, instructional equipment would play a major role in the learning process during coming years.
- vi) It is necessary that learning be made available to small groups or to individuals remote from the "standard" campus.

d) Immediate Community and the World

Field trips and travel, as integral parts of the educational process, broaden the boundaries of resource centres. Resource people can be brought into the college from the community, and from wherever in the world it is feasible to draw them. Equally important, the students can increasingly move out of the college to the community and the world.

Therefore:

- i) Field trips to observe, apprenticeships, and periods of employment in a chosen field should play a larger role in the learning process.
- ii) Travel to foreign lands, living under foreign cultures, learning a language where it is a first language, and similar foreign activities should earn credits for participating students. The learning environment becomes, in effect, the shrinking globe; the field trip of today becomes the global travel of tomorrow.
- iii) Exchange programs for college students would help solve financial and accommodation problems. Exchange between

colleges, between provinces, and eventually between countries should be encouraged.

- iv) Universities and industries concerned with educational programs should be the source of the most up-dated learning materials, and a network of co-operative use of these materials could provide a multitude of new resources to college students. Universities and appropriate industries in the immediate area would be good places at which to begin such programs.
- v) Practical experience in a given field should earn credits for the student so employed (a prospector would probably have credits in geology before he ever begins a course).
- vi) The use of radio and the "open-line" to provide lectures and to obtain feedback from a wide audience should be extended. (Perhaps one day a lecture in Europe will be beamed to Canadian students.) The possibilities are very great, and the possible application of the Australian experience for remote areas should be studied.
- vii) The work environment should be served as well as the home or institution environment. In-plant studies should be possible whenever enough workers desire them. The learning resources (people, books, tapes, equipment, etc.) should be transported into the work environment when it is practically feasible. Prisons, sanatoriums, and other places where people are gathered should be included.
- viii)Vans and trailers can be used to carry learning resources to isolated or distant areas. The improved use of vans,

trailers, and mobile studios should be studied as a means of taking the learning environment (software and hardware) to small groups and individuals.

- ix) Establishment of sub-resource centres in large apartment blocks, shopping plazas, church basements, etc. would facilitate learning for many.
- x) All residence requirements in post-secondary academic institutions should be waived, except where specialized equipment requires that the student attend laboratories, etc.

e) Research of the Learning Process

The measurement and evaluation of the output and efficiency of the educational process at all levels will no doubt get increasing attention and scrutiny from the public and all the funding agencies during the coming years. Therefore:

- i) It is important that the colleges take lead in establishing well-defined operational objectives for each program area and developing more effective evaluation criteria and methods for measuring and improving the efficiency of resource allocation in accomplishing their educational objectives.
- ii) Evaluation of the effectiveness of the various technological aids should be the ongoing concern of the colleges.
- iii) Professional development and upgrading of resource people should be a continuing process.
- iv) An efficient network of communication should keep all the college staff aware of new theories, new experiments, new successes, and failures.

## CHAPTER II

ADMINISTRATION AND FINANCING OF THE  
ONTARIO CAATs AND OTHER SYSTEMSA. The CAAT System<sup>1</sup>1. Administration

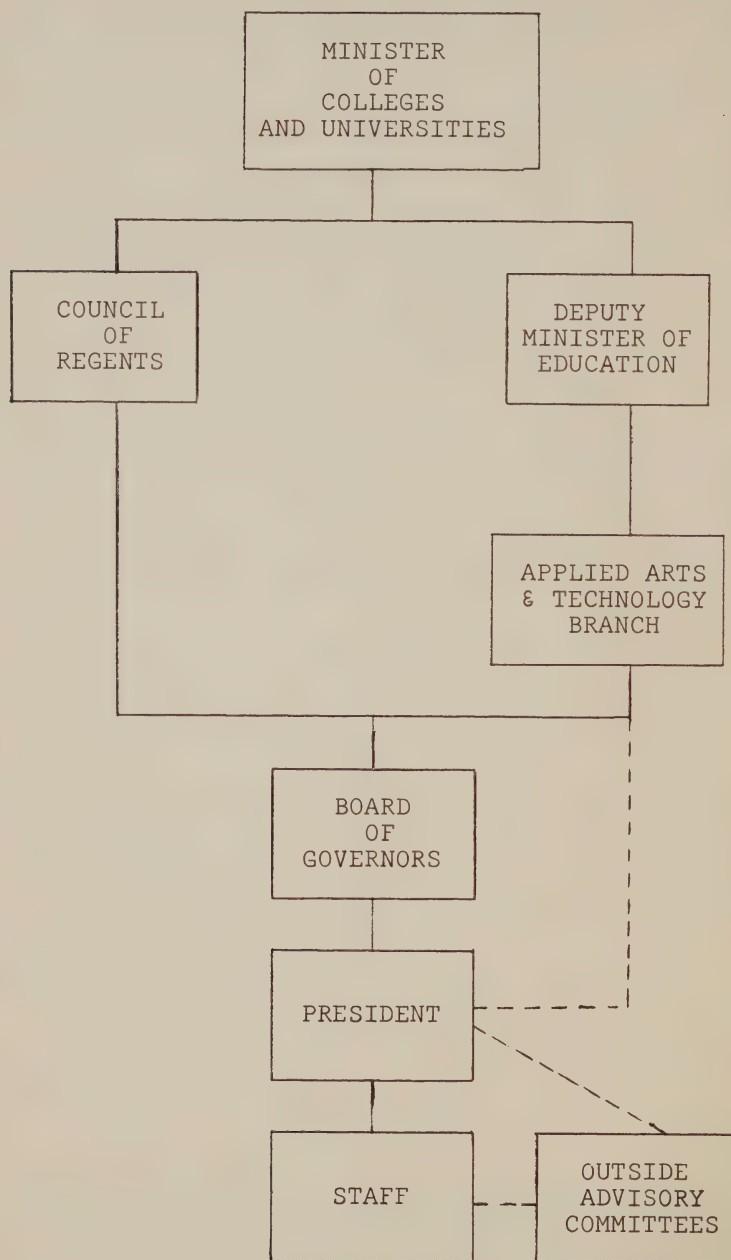
Each college is a separate institution, free in many ways to pursue policies established by its board of governors and president. Within the colleges, the faculty do not usually have the kind of institutional power one associates with university academicians. The organization of the system, and of each college within it, reflects the desire of the former Minister of Education, William G. Davis, to seek a new solution to some of the educational problems of an industrial society.

The basic structure of the Ontario college system is outlined in the Figure 2 on page 19, which simplifies a fairly complex set of linkages and communications. Depending to some extent on the people involved in each college, the system exhibits characteristics of "checks and balances." Colleges have a considerable amount of autonomy with respect to the Council of Regents and the Applied Arts and Technology Branch of the Ontario Department of Colleges and Universities--as long as they conduct their affairs in accordance with official policy.

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<sup>1</sup> For further information on the origins, enabling legislation objectives and policies, see Ontario Department of Education, Colleges of Applied Arts and Technology Basic Documents (Toronto, June 1967). See also Gordon Campbell, Community Colleges in Canada (Toronto, Ryerson Press, 1971), 36-56.

## ORGANIZATIONAL STRUCTURE OF THE CAATS SYSTEM



The entire system is responsible to the minister of Colleges and Universities in whom is vested the authority to "establish, name, maintain, conduct and govern colleges of applied arts and technology."<sup>2</sup>

Under the legislation, each board of governors was appointed by the minister, on the recommendation of the Council of Regents, also appointed by the minister. Perhaps the most important function of the boards is to appoint college presidents, who cannot be directly removed by action of either the minister or the Department of Colleges and Universities under ordinary circumstances. In administering the college, the president is formally carrying out the policies of his board, either emanating from the board itself or through it from the Council of Regents.

The Council of Regents is a body of 15 persons, established to provide over-all guidance to the boards of governors, to recommend approval of the establishment of new programs and new buildings, and to establish salary scales. The latter function is now complicated by a new collective-bargaining process, in which the Applied Arts and Technology Branch plays a supporting role for negotiation purposes. The Council of Regents also sets the tuition fees for the system, subject to the approval of the minister.

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<sup>2</sup> Basic Documents, 24

The Applied Arts and Technology Branch of the Department of Colleges and Universities is the administrative arm of the minister, and to some extent also of the Council of Regents. On behalf of the minister, the branch reviews the college operating and capital budgets submitted to the minister by the boards of governors. On the academic side, the branch helps co-ordinate the development of college curricula. It also receives many reports from the colleges, using this information to evaluate plans and budgets and to answer questions that are forwarded from time to time from the legislature, the minister's office, and from outside agencies.

The president of each college is typically the key member of the institution, exercising a strong control over its activities and plans.

Each college has advisory committees of knowledgeable and influential citizens from its community. These committees are generally most occupied with suggesting and planning changes in the college curricula to keep them in tune with labour market conditions.

#### B. Financing

The Ontario Colleges of Applied Arts and Technology are financed primarily by the government of Ontario, for both operating and capital funds. The only offsetting revenues are nominal student fees of \$25 per course or a maximum of \$150 per year. That situation applies to the regular post-secondary

students. Sponsored students have the full estimated cost of their education paid by the sponsoring agency: e.g. the federal Department of Manpower and Immigration (retraining programs), the Ontario Department of Labour (apprenticeship programs).

Beginning in fiscal 1971-72, the Ontario colleges will receive their operating moneys from the province in the form of a grant made up of payments for each (post-secondary) student, of special allowances if necessary because of the location or size of the institution, and funds for rental of accommodation. The formula concept is similar to that now employed for supporting Ontario universities. Essentially, the colleges will be paid according to their enrolments, with allowance for the fact that some programs cost more than others, some colleges are remote or underdeveloped as yet, etc.<sup>3</sup>

The use of the formula greatly reduces the problem of operating budget control from the government standpoint, since the main determinant is now not what the college "needs" in some demonstrable sense, but what it will be entitled to under its special circumstances and its achieved enrolment. The operating grants to the colleges are not the result of any special provincial tax levy. They come from the general consolidated revenue fund of the provincial government.

Although no specific formula is used, capital budgets are approved and moneys given to the colleges to build authorized structures and related facilities. Many colleges originally

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<sup>3</sup> See Appendix A for details of the Formula Financing Scheme for the CAATs.

rented accommodation pending design and construction of their own campuses.

In order to provide some perspective to the discussion of the Ontario CAATs, brief descriptions of five other college systems are provided in the following section. The colleges systems of Quebec, Alberta, Illinois, California and New York were chosen since they appear fairly representative of the type of college systems found in the United States and Canada.

C. Quebec's Community Colleges: CEGEP

1. Administration

As a result of the recommendations of the Parent Report, the government of Quebec made legal and financial provision for a system of community colleges, beginning in 1967. Now 36 in number and growing still, both in numbers and enrolment, the CEGEPs (collèges d'enseignement général et professionnel) are just one manifestation of wide-spread change, modernization, and secularization in Quebec education. The work of Alphonse-Marie Parent and the implementation of his recommendations were accomplished with unprecedented speed and with an unusual degree of fidelity in terms of the history of royal commissions.<sup>4</sup>

The CEGEPs have some characteristics in common with the Ontario Colleges of Applied Arts and Technology, but play a different role in certain respects, too. The Quebec system in general is perhaps more normally organized and more standardized

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<sup>4</sup> Report of the Royal Commission of Inquiry on Education in Quebec (Montreal, 1963-6).

between institutions than the Ontario system. Differences in historical background and in constituent and precedent institutions also account for differences between the Ontario and Quebec systems.

The CEGEP system is more complex than the CAAT system of Ontario, partly for historical reasons and partly because it has a somewhat different mission. Unlike the Ontario colleges, the CEGEPs are responsible for presenting programs at the first- and second-year university levels. They also have two- and three-year programs with occupational orientations, and are thus partly engaged in "transfer" programs.

The CEGEPs are by no means all new institutions. Most are a consolidation of older classical colleges, technical institutes, and normal schools. One of the early recommendations of the Parent Commission was for the establishment of a Ministry of Education. This was accomplished in 1964; the CEGEPs are guided by one of its branches -- the General Directorate of College Education (DIGEC). The branch issues regulations and provides controls under the terms of the General and Vocational Colleges Act of 1967.

Each college is managed by a board of governors made up of local citizens, college faculty, and students, as well as the principal, president and academic dean. In this respect, the CEGEPs are more "local" and perhaps more "democratic" in their makeup than the Ontario colleges. They have, however,

suffered more from student unrest than have the Ontario colleges, whose students do not face problems such as disillusion with lack of reform in both classical curricula and vocational programs as well as teaching methods, lack of student services in the colleges, and a fear that they would be unable to gain access to either the universities or the labour market on completion of their two- or three-year programs. The latter fear has been justified by events, with severe problems of placing students. One result has been that the balance of enrolments is still heavily weighted in the direction of the transfer programs whereas the emphasis desired by the government was the reverse.

Also, unlike the CAATs, the CEGEPs have a powerful and active federation--with an assembly, council, and executive office. The lobbying and informational functions of this body have no duplication in Ontario, where the Association of Colleges of Applied Arts and Technology has yet to acquire such a weighty role.

## 2. Financing

Unlike their Ontario counterparts, CEGEP students do not pay fees when they are attending school as regular full-time (four courses) students. Courses for part-time evening students are expected to be self-sustaining, as in the Ontario system's "general interest" (non-credit) courses and, in these courses, students pay fees. However, part-time students are able to avoid paying fees if they register for four courses and "fail"

(i.e. not take) two of them, without being suspended from the program. The difference between the two systems in the matter of fees is perhaps not as important as it might at first sight appear to be: fees in the Ontario colleges represent only 7 to 12 per cent of total operating expenses. A more important consideration is the opportunity cost to the students and to the society when increasing numbers of young people who would otherwise be in the labour market are maintained in the educational system. Does the college training really return more to the individual and the society than it costs?

Measurement of such variables is not easy.

In preparing their operating budgets, the CEGEPs are constrained by specific cost guidelines relating to pupil/teacher ratios and limitations on costs of services, salaries, facilities, and equipment, so that budgets tend to vary fairly directly with size of the institution. However, there is no clear-cut "formula" as in the Ontario system. On the available evidence, which is not by any means incontrovertible, the Ontario colleges appear to be much more strongly financed than those in Quebec, with substantially higher operating expenses per student.

As in Ontario, the capital budgets of the CEGEPs are financed by the Ministry of Education. No special taxes appear to be earmarked for this purpose.

D. Alberta's Community Colleges

1. Administration

Alberta has 14 community colleges, in four categories: 1) agricultural and vocational schools, 2) institutes of technology, 3) public colleges, and 4) private institutions. The first public college was founded at Lethbridge in 1957, although a much older institution, Mount Royal, became a public college in 1966.

After a long series of conferences, reports, and work by several committees of educators and citizens, the Alberta legislature passed an Act Respecting a Provincial College System in 1969.

The Alberta system is not yet as unified as those in Ontario and Quebec, although it has been segregated from the universities with which the individual colleges were in some instances formerly associated.

Under the leadership of the Board of Post-Secondary Education, the enabling legislation was drafted. It set up a college system distinct from that of either the school or university systems. The Alberta Colleges Commission has been endowed with broad powers of planning and control. It looks forward to eventual consolidation of all the colleges under its control but at present the larger institutes of technology (and the agricultural schools) are formally outside the college system. For these the Department of Education, and not the

ACC, will become affiliated with the Department of Education in much the same way as the Council of Regents in Ontario is attached to the Ontario Department of Colleges and Universities.

The provincial government has appointed local boards of governors, each having faculty and student representation. At the same time, the local financing arrangements were replaced with provincial financing. Local property taxes are no longer used to support the colleges, as had been the case when they were related to the local school boards.

The lack of uniformity in the constituent institutions reflects a diversity of purpose in the Alberta system. Its main objective is to serve young people who complete Grade XII and who do not go directly to university. Some college students enrol in university-parallel courses and eventually transfer to university. Being able to attend college while living at home is an economic advantage.

Courses at the secondary-school level, for students who would otherwise not be able to gain admission to the colleges, may be taken along with university-level or vocational programs.

In terms of control, the Alberta Colleges Commission has, on paper, very broad powers for the creation and management of colleges. It is an independent body in its own right, and, unlike the Council of Regents in Ontario, theoretically has powers that here are vested in the Colleges and Universities. Civil service members of the Commission are its links to

government. The role of the Commission is evolving and its powers are reportedly not in fact being used to the extent that the law would allow. There has always been a strong local educational tradition in Alberta, which is not surprising in a province with vast distances and scattered population centres outside Calgary and Edmonton. This local tradition has built-in political protection, and will not be changed soon in any radical way. The universities control the descriptions and contents of courses that lead to transfer to their institutions from the college level, and that function also is not going to be taken over by a central commission in the near future.

## 2. Financing

College students pay fees which vary between colleges but are generally lower than university fees, ranging from \$60 to \$80 a year. The balance of the operating costs of the colleges is paid by provincial government grants, as are capital requirements.

## E. The Community Colleges of Illinois

### 1. Administration

As reorganized under the Illinois Public Junior College Act of 1965, the state has 37 college districts with 46 campuses, and a projected fall 1971 enrolment of more than 100,000 full-time students, with a headcount of nearly 200,000. For every full-time student, the system has about 1½ part-time students.

Courses offered by the system - which is under the general oversight of the Illinois Junior College Board - are divided between occupational and university-transfer programs. Enrollment in the latter is about one-third to one-half greater than in the former.

The first publicly financed junior college was established at Joliet in 1901. As recently as 1930, there were only six such schools in the state. A considerable expansion has taken place since the passage of the IPJC Act in 1965: enrolments have tripled, and some institutions are still operating in temporary quarters. The emphasis on occupational programs is of fairly recent origin since the Illinois colleges, like most others in the U.S., were originally organized to provide economical and accessible college-level academic programs to local students not able to go away to college for a four-year baccalaureate degree.

Formally, the entire post-secondary educational system of Illinois is under the Illinois Board of Higher Education, which is superimposed on five agencies:

Trustees of the University of Illinois  
(Urbana, Chicago Circle, Medical Center-Chicago)

Trustees of Southern Illinois University  
(Carbondale, Edwardsville, Vocational Technical Institute)

Board of Trustees of the Regency Universities  
(Chicago State College, Eastern Illinois University, Northeastern Illinois State College, Western Illinois University, Governors State University)

Illinois Junior College Board plus  
(37 institutions including the  
7-campus City Colleges of Chicago)

The IJCB has issued an exceptionally informative official booklet on Standards and Criteria for the Evaluation and Recognition of Illinois Public Junior Colleges and other Guidelines, Policies and Procedures Approved by the Illinois Junior College Board (Revised 1970). It explains that the Illinois system is highly autonomous in practice, with substantial local initiative and financing, yet with a final control veto by the IJCB. The local college district is created by local petition and referendum. Local governing boards are elected by local citizens. Sites are searched and selected by the board subject to IJCB approval, and programs proposed by the local board are also subject to IJCB approval.

## 2. Financing

The finances of the State of Illinois, like those of other U.S. states, are currently in chaotic condition for a number of reasons such as political conflict between rural and urban legislators in both the Republican and Democratic parties, and constitutional problems over tax legislation. The impact on the junior colleges has been to slow the rate of increase in their funds requested from Springfield, Illinois.

In general, the trend has been for the state to provide an increasing share of educational funds, although the original policy was that the local taxpayers should contribute half the cost. Local boards could charge tuition to defray their half.

The state grant is now \$15.50 per credit hour, up from \$11.50 in 1965, and there is pressure from the IJCB to have the grant increased to \$20 to meet inflationary and other increases. (See Third Biennial Report, 1969-1970, of the IJCB, March 1971.)

The IJCB has recommended to the governor that equalization grants be added to the state grant in those cases where assessed land values available for local property taxation are below the state average and hence cannot yield the local education share for the colleges without exceeding average mill rates, but apparently no decision has yet been made on this as of October 1971. Grants could also be made for disadvantaged students.

In development of the system, capital funds totalling \$56 million have been contributed by local districts, plus \$14 in federal funds. The State of Illinois has authorized and made available \$145 million out of \$241 million in state capital grants proposed; the balance of \$96 million is being held up because of lack of state funds.

Under the official rules of capital funding, local districts have to pay at least 25 per cent of the total cost, the remainder being taken up by federal or state financial resources. (See Standards and Criteria, p. 49, C.2.c.)

The City Colleges of Chicago get their local financing from a mill rate on local real estate (special tax share). Tuition fees are limited to \$150 in all Illinois colleges.

In the City Colleges of Chicago only a registration fee is required: \$5 for 8 credit hours or less, \$10 for full load.

F. Community Colleges in California and New York

1. Administration

In both California and New York the colleges are locally controlled, by elected boards. They are quite autonomous with respect to local capital, operating funds, and curricula. The state-wide co-ordinating function (through The State University of New York and the State Department of Education in California) is weak, tending to be advisory, helping deal with the legislature, providing information, and spelling out long-term plans which are not mandatory. Lately, systems of approval have been established which eliminate duplications and ensure conformity with the laws of the states. In both states, the system is under study and may be changed in 1972.

California has 93 community colleges in 68 districts. Each district has a board and superintendent. All construction must be approved as to purpose and dollars at the state level, but the districts are then free to choose their own architects and to implement the approved plans. About 50 per cent of the capital funding comes from the state, the rest from local bonds and taxes. Districts must submit annual updated master plans for both construction and programs.

California also requires all professional personnel to hold credentials issued by the state. In the case of new

programs, there must be evidence of need and non-duplication, but once the programs are approved the districts can write or buy their own materials and work out the operating systems, define personnel needs, methods, etc.

The community colleges of California have two basic functions: to provide occupational and vocational programs to meet local and state needs; and to provide a lower-division program suitable for transfer to four-year colleges and the university. The college programs must conform to the requirements of the institutions to which their students transfer. There is great room for local option in both, but more in the vocational programs because the transfer requirements are fairly uniform. The state board provides the articulation.

In New York, the system is similar to California's, but there are differences. The community colleges are controlled by local nine-man boards, five people appointed by the governor and four by the local "sponsoring unit," which may be a city, county, school district, or combination of these. The defining unit is the agency that has the taxing power to support the community colleges, and the pattern is very mixed. They hire a president locally; he is the executive officer who then hires credentialled personnel.

## 2. Finance

In California about 65 per cent of the operating funds for

the community colleges are raised locally; the federal government provides about 5 per cent and the rest is supplied by the state on a formula basis (enrolment), including local taxable wealth as an equalizing factor.

In New York 40 per cent of operating costs are met by the state, variably by tuition (not more than \$550 per student per year), and the rest is covered by local taxation except for a small amount of federal program support. Capital funding is split 50/50 between state and local governments. Both educational programs and capital projects must follow state guidelines and be submitted for approval, but after the approval is given there is great local autonomy in implementation. Because New York is an older state, there are many variations for historical reasons.

As in California, trade and technical programs are terminal and meant to meet local demands. The lower-division transfer programs, as in California, must be equivalent to those of the four-year colleges and universities, and there is statewide co-ordination to ensure maximum transferability.

## CHAPTER III

## THE STUDENT BODY OF CAATs

A. Introduction

Several different types of students are enrolled in the Colleges of Applied Arts and Technology. The various categories of programs taken by these students are described further in the next chapter.

TABLE III-I

Percentage and Distribution of CAAT Students  
into Program Categories

<u>Program Category</u>	<u>%</u>
1. Fee-paying post-secondary (Full-and part-time)	61.6
Dept. of Social and Family Services	
2. Adult retraining (Federal referrals, Ontario referrals)	31.5
3. Apprentices (Dept. of Labour)	5.0
4. Training in Business and Industry	1.8
5. Management Development Program	0.1

The limited scope of this study has necessitated that the analysis of the composition of the student body be restricted to the largest and what is probably the most significant group: those students enrolled in full-time post-secondary programs.

The data for all analyses presented in this and subsequent chapters have been taken from the student and staff

information system developed jointly by the CAATs, the Ontario Department of Education and the Systems Research Group. The figures used represent the full-time post-secondary enrolment in the fall of 1970, and are based on the best information available as of July 31, 1971.

B. Enrolment by College - Male/Female

The full-time post-secondary enrolment at each college and the percentage of males and females within the student body are given in Table II-1. On the overall college average, male students make up 72 per cent of the CAAT enrolment, while female students account for only 28 per cent. These percentages vary from college to college due to the orientation of the programs offered at a college. The latter will, of course, be affected by the popularity of and the demand for certain fields of study in an area. It would be reasonable to assume that colleges with a high percentage of males would have curricula consisting of mainly business and technology programs while, in colleges with a higher proportion of females, there would be more arts and secretarial-oriented programs. For example, the Haileybury Campus of Northern College--a school of mines--has male students only. Other colleges with more than 80 per cent male post-secondary enrolment are: George Brown College (Toronto), Loyalist College (Belleville), Mohawk College (Hamilton), and the Kirkland Lake Campus of Northern College. The enrolment of Centennial College, on the other hand, is 59 per cent male and 41 per cent female. It should be noted

that Applied Arts and Business programs at Centennial are more popular and more numerous than those at most of the other colleges. The situation at the North Bay Campus of Cambrian College is similar.

The total full-time post-secondary enrolment for the CAATs in the fall of 1970 was 29,500. Individual college enrolments (separate campuses not included)<sup>1</sup> range from 502 students at Lambton College in Welland to 3,819 students at Algonquin in Ottawa.

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1. By a convention established within the CAAT system, separate statistics are reported for the major campuses of Northern and Cambrian Colleges.

TABLE III-2  
 COMMUNITY COLLEGES  
 OF APPLIED ARTS AND TECHNOLOGY  
 ENROLMENT 1970-71

College	Male %	Female %	Total Enrolment
Algonquin	79.0	21.0	3,819
Cambrian			
Sudbury	74.1	25.9	727
North Bay	57.7	42.3	503
Sault S. Marie	85.3	14.7	721
Centennial	59.4	40.6	1,823
Conestoga	78.0	22.0	1,172
Confederation	68.8	31.2	798
Durham	72.5	27.5	582
Fanshawe	67.3	32.7	1,976
George Brown	80.1	19.9	804
Georgian	70.4	29.6	564
Humber	60.6	39.4	2,126
Lambton	70.1	29.9	502
Loyalist	80.0	20.0	525
Mohawk	82.5	17.5	2,369
Niagara	68.8	31.2	1,403
Northern			
Porcupine	75.4	24.6	199
Kirkland Lake	86.9	13.1	373
Haileybury	100.0	0	156
St. Clair	72.4	27.6	1,799
St. Lawrence	72.6	27.3	1,546
Seneca	71.8	28.2	2,119
Sheridan	64.1	35.9	1,721
S.S. Fleming	78.0	22.0	1,173
TOTAL	72.4	27.6	29,500

### C. Geographic Origin of CAAT Students

Table III-2, showing the enrolment in the colleges of students from Ontario by county or township of origin, permits a study of the geographic origin of students at a particular college, and also which colleges the students from a certain location attend. For example, of 612 CAAT students from Peel County (in the Sheridan College area), 377 go to Sheridan while 153 attend Humber College in Toronto; of 618 CAAT students from Ontario County, 401 attend Durham College which is in their own area, while 58 attend Centennial College and 45 attend Seneca College, both of which are in Toronto.

The percentage of students at each college who come from within that college's attendance area are listed in Table III-3. The overall college average is 76 per cent. The percentages range from 53 per cent at Seneca in Toronto to 96 per cent at Confederation College in Thunder Bay. It may be noted that the colleges in and near Toronto attract a higher proportion of students from outside their areas than do the other colleges.

## COLLEGES OF APPLIED ARTS AND TECHNOLOGY - 1970-71

## Student Enrolment by County of Origin (Ontario)

STUDENT ORIGIN (County)	COLLEGE	Algoma	Caribou	Georgian	Humber	Lambton	Mohawk	Niagara	Northgate	Northumbria	St. Lawrence	Senecca	Sheridan	S.S. Pleming	TOTAL	
01 Lanark		89	2	1	2	1	4	2	1	2	8	3		24	1 2 11 158	
02 Ottawa-Carleton		2002	2	5	16	7	3	2	9	6	8	13	1	4	2 1 1 29 8 47 17 2183	
03 Prescott & Russell		109			1										26 1 1 4 143	
04 Renfrew		212	4	7	1	7	4	2	1	7	6		2	5 2 24 6 1 5 301		
05 Stormont/Dun/Glen		80	1	1	2	3	1	1	4		1	1	2	8 3 435 1 4 6 554		
11 Kenora		2	11	1		84		1	1	1	1	1	1	6	1 1 3 114	
12 Rainy River		3	17	2	3	46		2	1			1	2	4 1 3 1 86		
13 Thunder Bay		8	5	3	40	4	1	56	3	7	6	3	7	2 4 8 3 12 3 688		
21 Algoma		9	18	5	380	5	2	5	3	2	8	1	1	2	4 4 1 3 7 3 463	
22 Manitoulin		1	15	1	9	1		1		2				1	3 1 35	
26 Sudbury		14	548	36	56	7	3	3	2	5	8	4	7	1 1 3 4 13 3 5 3 14 7 5 754		
31 Cochrane		25	17	26	23	2	2	1	7	5	1	6		2 5 160 71 10 4 3 6 6 4 388		
32 Muskoka		10	4	9	4	5		2	2	31	4		2	1	1 1 9 3 5 94	
33 Nipissing		33	27	210	21	6	1	1	4	5	2	4	1	5 1 32 7	4 6 4 3 377	
34 Parry Sound		6	8	24	2	3		5	2	15	3		1	15	1 1 5 6 11 108	
35 Timiskaming		9	10	36	17	3		6	2	4		2	1	14 160 28	1 5 2 302	
41 Elgin						3	5	1	139	1	3	10	3	1	6	1 3 8 184
42 Essex		3	1	3	5	5	1		38	1	2	6	2	1 1	1370 1 2 8 6 1456	
43 Huron			1		3	17			78	1	1	10	1	5	1 3 1 2 2 7 133	
44 Kent		1	2			3			71	4		3	50	5 4 1	215 4 5 2 6 376	
45 Lambton		1		4	6		2	67	2	2	6	388	1	1	6	4 4 8 502
46 Middlesex		7	2	2	4	8		1	868	2	3	3	11	1	2 16 2 2 7 19 971	
51 Brant		2	1	1	2	10	39	1	1	53	1	1	176	8	1 1 1 1 3 4 5 314	
52 Bruce		1	2		3	3	28	1	41	2	29	3	3	2	1 1 4 9 12 147	
53 Grey			9	13	1	1	35	3	55	11			6		2 3 3 17 11 170	
55 Oxford		1		2	4	24		161	4		3	3	11	5 1 1	8 2 4 7 12 253	
56 Perth		1		3	4	53		65	1		2	3	1	1 1	1 1 4 8 150	
57 Waterloo		3	2	2	7	672		3	37	6	1	11	3	28	4 2 1 2 3 9 14 19 829	
58 Wellington		1		9	9	165		2	20	3	1	10	2	1 33	3 1 2 6 29 5 302	
61 Halimand			1	1	12	27	10	1	3	24	16	2	24	79 1220	1 2 4 16 48 20 1511	

TABLE III-3

TABLE III-3 (cont'd)

STUDENT ORIGIN (County)	COLLEGE	CONFEDERATION	DURHAM	FARNSHAW	GEORGIA	HUMBER	LAMBTON	MOWAWK	MUGAGARA	NORTHERN PORCUPINE	NOTHHERN KILKILAND LK.	ST. LAWRENCE	SENeca	SHERIDAN	S.S. FLEMING	TOTAL	
63 Norfolk		2	3	1	83	2	3	7	2	72	8	3	1	1	7	4	210
64 Wentworth		4	1	7	9	4	1	14	6	4	18	4	1	1	4	2	1,310
71 Dufferin		1	1	1	6	3	1	5	6	19				1	9	33	89
72 Halton		1	1	3	10	3	9	9	2	42	2	180	10	2	1	22	680
73 Peel		1	3	14		5	21	3	153	2	3	5		1	1	16	377
74 Simcoe		2	4	7	4	23	5	1	3	11	14	346	23	3	4	5	15
75 York (Tor.1)		7	13	4	7	573	12	4	6	-14	419	12	1418	1	2	10	1
76 York (Tor.3)																	2
81 Haliburton		1		3	1	3	1									1	11
82 Ontario		1	1	1	58	8	1	401	5	17	3	14	6	1	4	2	29
83 Victoria		2		7	1	4	3	3	3	2			2		1	6	107
84 York (excluding Metro Tor.)		1	5	34	1	4	2	15	7	37	1	1	1	1	1	3	332
85 York (Tor.2)		10	803	1		1	59	4	157		1		1	1		895	54
91 Frontenac		5	1	1	4	1	1	7	3	1	8	4	1	1	1	541	589
92 Hastings		14	2	3	5	1	5	4	4	11	318	1		2	1	18	445
93 Leeds & Grenville		71	2		2		3	4	1	7	2	3	5	3	2	209	19
94 Lennox & Addington		4				1		2	2	22	1	1	3		42	1	6
95 Northumberland and Durham				15		1	110	3	7	11	63	4				5	111
96 Peterborough		4	1	1	2	1	3	6	2	1	10	1				3	505
97 Prince Edward		2	3	7	1						33	1			8	3	73
Sub Total		2749	701	389	693	1721	1126	721	574	1930	687	557	2082	500	506	1822	1386
* Students Not Included in Report		1070	26	114	28	102	46	77	8	46	117	7	44	2	19	547	1445
Total College Enrol.		3819	727	503	721	1823	1172	798	582	1976	804	564	2126	502	525	2369	1403
																156	1799
																1721	1173
																2119	29,500

\* These students are either from outside of Ontario, or their data was missing.

TABLE III-4  
 PERCENTAGE OF ONTARIO RESIDENTS ATTENDING EACH  
 CAAT FROM ITS OWN ATTENDANCE AREA

	%
Algonquin	88
Cambrian	74
Centennial	80
Conestoga	81
Confederation	96
Durham	89
Fanshawe	65
George Brown	61
Georgian	86
Humber	68
Lambton	78
Loyalist	86
Mohawk	78
Niagara	90
Northern	72
St. Clair	95
St. Lawrence	82
Seneca	53
Sheridan	54
Sir Sandford Fleming	58
Average	76%

D. Socio-Economic Background of CAAT Students

The level of education attained by the parents of students attending the colleges provides an insight into the socio-economic background of these students.

Table III-5 represents the highest level of education attained by the students' parents as a percentage of enrolment. Data on "known" levels of education were available for only 59.5 per cent of the students' fathers and 59.8 per cent of their mothers. The percentages for each of the actual levels have been based on the known figures only.

The majority of these students' parents--about 60 per cent--never reached the high school graduation level or had any other formal or specialized education. Of the remaining 40 per cent of the fathers and mothers, 16.4 and 24.5 per cent respectively were high school graduates who had no further education, 10.2 and 11.3 per cent respectively undertook various types of specialized education after high school, and 11.5 and 5.1 per cent respectively either attended or graduated from university.

TABLE III-5  
 Socio-economic Background of CAAT Students  
 (determined by the educational level attained  
 by the students' parents)

	Father %	Mother %
Attended elementary school only	31.1	24.9
Attended high school but did not graduate	30.8	34.2
Graduated from high school	16.4	24.5
Had some type of specialized education	10.2	11.3
Attended university but did not graduate	3.7	1.9
Graduated from university	7.8	3.2
	100.0	100.0
Percentage of students who provided information on this subject	59.5	59.8

#### E. Educational Background of CAAT Students

It is interesting to examine the educational background of the students who are attracted to and attending the colleges. Table III-6 shows the most recent level of education of the CAAT students as a percentage of total college enrolment.

The majority of students, almost 88 per cent, come to the colleges after completing secondary school programs. Another 3 per cent have transferred from one CAAT to another with credits in a post-secondary program, and 2.4 per cent have

completed university to at least a bachelor level. Almost 2 per cent of the students have taken a retraining program, 0.4 per cent, an apprenticeship program, and 1 per cent have completed a CAAT qualifying program. The 0.8 per cent who have only completed elementary school have entered the colleges as mature students.

A study of the new entrants to the colleges in the Fall of 1970 shows that on an overall college average 76 per cent were full-time students during the previous year while almost 20 per cent were out of school, either employed or unemployed.

For the most part, the post-secondary programs in the colleges seem to be attracting recent high school graduates, and the majority of these are male.

A significant comparison of the educational levels being attained by these CAAT students and those attained by their parents can be made. While 88 per cent of these students have completed high school and all of them are now at a post-secondary educational level, only 38 per cent of their fathers and 41 per cent of their mothers graduated from high school and only 22 per cent of these fathers and 16 per cent of these mothers ever went beyond the secondary-school level.

TABLE III-6  
Educational Background of CAAT Students  
(Students most recent level of education  
as a percentage of total enrolment)

	%
Completed elementary school	0.8
Completed secondary school	87.9
Completed university	2.4
Professional certification	0.7
CAAT post-secondary	3.1
Retraining program	1.7
Apprenticeship program	0.4
CAAT qualifying	0.9
"Other"	2.1

It is quite obvious that these students are receiving a much higher level of education than their parents ever had the opportunity to receive. The Colleges of Applied Arts and Technology appear to be serving a group of people of a distinct socio-economic background, with appreciable success.

#### F. Age Distribution of Post-Secondary CAAT Students

Table II-7, page 49, provides a percentage breakdown of post-secondary CAAT students by age grouping. It is interesting to note that 10.1 percent of student body is 25 years or over.

The age distribution of CAAT students reflects the fact that many students do not come to the college directly after high-school graduation. In section E of this chapter,

pages 46 and 47, it was noted that although 87.9 per cent of students indicated that they had completed high school, only 76 per cent of the students were in school the year before coming to the college. Thus 24 per cent of the students were either employed or unemployed before coming to the college. In other words, for a significant percentage (24) of post-secondary students and for all retraining students the colleges provide a new opportunity for the improvement of their talents and skills.

TABLE III-7

Age Distribution of Post-Secondary CAAT Students

	%
18 and under	1.8
19	13.4
20	23.7
21	22.9
22	14.9
23	8.5
24	4.7
25-29	6.6
29-34	1.5
34-39	0.8
39 and over	1.2

## CHAPTER IV

## THE ACADEMIC STAFF OF THE CAATS

The character of any organization in a large measure reflects the character of the key personalities in that organization. In the character of the system of colleges of Applied Arts and Technology is a reflection of the Academic staff at the colleges. Nine colleges<sup>1</sup>were chosen for a more detailed analysis of the composition of their academic staff.

Table IV-1, page 51, provides a percentage breakdown by age groupings of the academic staff. It indicates that the staff is fairly young: 74 per cent are under 45 years of age and 43.5 per cent are under 35 years of age. The dynamism of the colleges, as evidenced in the many new and innovative programs and teaching methods, is probably in part the result of the youthful academic staff at the colleges. One imbalance consists of the high percentage of males (82.5) and the low percentage of females (17.5) on the academic staff. One might have expected a higher ratio of female staff members in view of the fact that 27.6 per cent of the students are female.

The qualifications of the academic staff of post-secondary institutions are often used as a barometer of the general quality of such institutions. Table IV-2, page 51, provides a percentage breakdown by qualification of the academic staff at the CAATs.

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1. Centennial, Georgian, Loyalist, Cambrian, Algonquin, Niagara, Mohawk, Northern, Seneca.

TABLE IV-1

## Age Distribution of Academic Staff at the CAATs

Under 25	1.5%
25-35	42.0
36-45	30.4
46-55	18.5
56-65	7.4
Over 65	0.4

TABLE IV-2

## Academic Qualifications of Academic Staff at the CAATs

Doctorate	1.8%
Masters	17.7
Honors	19.5
Pass Bachelor	30.8
Certificate	15.9
CAAT Diploma/equivalent	5.7
Craft Paper	9.1

It is the opinion of the author that it is a serious error to equate higher academic qualifications with higher quality. Quality must be judged in terms of the objectives of the programs of the institution. Since the CAAT programs are predominantly career oriented, practical experience is probably a greater necessity than academic qualifications.

Table IV-3, page 53, indicates that only 48.7 per cent of the academic staff have an "educational" background, while 51.3 per cent came to the CAATs from business, government or other non-educational types of employment. It should be noted that a number of colleges state explicitly that they would like to preserve this 50-50 split. This is of course entirely consistent with the objective of the CAATs to develop programs of applied arts and technology.

Since the issue of the "Americanization" of the universities has become one of concern to the Ontario government, it might be interesting to note the geographic origin of the academic staff of the CAATs. It should be noted that the table does not indicate the nationality of academic staff per se, rather it indicates in what country the individual staff member obtained his education. If we assume that there is a close correlation between a person's nationality and the country in which he obtains his education, then Table IV-4 indicates that only 10.4 per cent of the CAATs' academic staff is American, 74.6 per cent Canadian and 15.0 per cent other. It is interesting to note that a very large percentage of doctorates held by CAATs staff were obtained in the U.S.

TABLE IV-3

## Last Position of Academic Staff Before joining CAATs

Student	5.8%
CAAT	19.3
University	6.5
School Board	17.1
Business	33.6
Government	7.1
Other	10.1
Unemployed	0.5
<hr/>	
Total	100.0%

TABLE IV-4

## Geographic Origin of Academic Staff at the CAATS

Canada

Alberta	1.2%
B.C.	2.0
Manitoba	2.0
New Brunswick	1.3
Newfoundland	0.3
Nova Scotia	2.0
Ontario	59.0
P.E.I.	0
Quebec	5.4
Saskatchewan	1.6
Sub-Total	74.6

Other Countries

U.S.A.	10.4%
U.K.	9.2
Europe (continent)	2.6
Africa	0.4
South America	0.2
Australia	0.6
India	1.9
Sub-Total	25.4
Total	100.0%

It is difficult to draw any conclusions from this brief description of the composition of the academic staff of the CAATs. The author only offers the observation that the youthfulness of the staff combined with the diverse background of academic staff in terms of educational qualifications and work experience provides a stimulating learning environment for that segment of Ontario's youth which seeks an alternative to university.

## CHAPTER V

## THE PROGRAM STRUCTURE OF THE CAATs

A. Introduction

The Colleges of Applied Arts and Technology of Ontario offer seven broad categories of programs.

1. Post-secondary Regular

The first program category includes all programs that require for admission the attainment of a level not lower than that of a secondary-school graduation diploma. In its regular post-secondary offerings, each college provides a fairly uniform set of programs in the three major sectors of business, applied arts, and technology.

2. Nurse Training

A number of colleges have made arrangements with regional schools of nursing to provide nurse training education. This usually consists of providing the schools of nursing with academic staff for the non-clinical areas. However, it is expected that some colleges will eventually also take on responsibility for the teaching of clinical subjects.

3. Other Non-post-secondary Programs

This category of programs includes various non-credit programs and general-interest courses. Starting in the Fall of 1971, the province has undertaken to provide some measure of financial assistance to colleges that offer these courses. This represents a break with the traditional pattern where non-credit or avocational courses were

required to be strictly self-supporting.

4. Apprentice Training

Apprentice training programs include all courses authorized as training courses by either the Department of Education or the Ontario Department of Labour.

Apprentice training programs may have both provincial and federal student referrals.

5. Retraining

This category includes all programs under the Ontario training agreement with the federal government. Most of the students in these programs are referred to the college by Canada Manpower Centers. However, various other government agencies will from time to time refer students to these programs--for example, the Ontario Department of Social and Family Services or the federal Department of Indian Affairs and Northern Development.

6. Training in Industry

This program category includes all programs where college staff go out to specific industries and conduct courses at the request of the industry. The cost of these programs is shared by the province of Ontario and the particular industry or business. The business or industry provides physical facilities and company time for the training programs. The province provides the teaching master<sup>2</sup> and any educational materials that may be required.

2. Note the use of the term "teaching master" which is consistent throughout the CAATs.

#### 7. Ontario Management and Supervisory Development

This program category consists of management training courses sponsored by the Department of Education. These training courses are publicized through local chambers of commerce. Educational material is provided by the Department of Education directly and the colleges provide the academic staff required.

The program structure of the colleges reflects two things:

1). a regional impact, a need for education that varies from place to place and, 2) a government policy of providing a respectable, even prestigious, kind of education that does not mean that a person has dropped out if he does not achieve a university degree. The labour market, not the university system, is intended to be the doorstep of the Ontario colleges. It is perhaps the only system in North America that does not have a significant role for formal university transfer programs. Although current labour market conditions are tight for almost every kind of graduate, university degree or no, the Ontario colleges have had a strong orientation on job preparation, as distinct from the universities which have generated over-supplies of overtrained personnel. The Ontario colleges are keeping attuned to practicalities of the labour market and do not wish to lose control of curricula to the universities.

#### B. Programs and Enrolment in the Ontario CAATs

The following pages provide a comprehensive list of all post-secondary programs offered by the individual colleges. The

enrolment figures are approximate and relate to the fall term  
of the 1970-71 academic year.

TABLE V-1  
COLLEGES OF APPLIED ARTS AND TECHNOLOGY

**COLLEGES OF APPLIED ARTS AND TECHNOLOGY**  
**PROGR<sup>AM</sup> ENDMENT 1970-71**

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

COLLEGES OF APPLIED ARTS AND TECHNOLOGY  
PROGRAM ENROLMENT 1970-71

		COLLEGE		
		Algonquin		
Air Transport		Cambrian	Sudbury	6
Aircraft Maintenance		Cambrian	North Bay	53
Aviation and Flight		Cambrian	S.S. Marie	53
Animal Care		Centennial		
Architectural Arts		Conestoga		
Architectural	101	Confederation	Durham	6
Bio-Chemical	118	Fanshawe	George Brown	93
Bio-Medical		Humber	Georgian	93
Cartography	57	Lambton	Humber	65
Computer		Loyalist	Mohawk	65
Construction	46	Niagara	Northern	10
Electro-Mechanical		Porcupine	Kirkland Lk.	
Electronics (General)	13		Northern	
Forest	70		Haileybury	
Graphic Arts	44		St. Clair	
			St. Lawrence	
			Seneca	
			Sheridan	
			S.S. Fleming	
			TOTAL	
				308
				118
				1
				1
				40
				97
				5
				26
				204
				29
				53
				808
				368
				575
				18
				141

COLLEGES OF APPLIED ARTS AND TECHNOLOGY  
PROGRAM ENROLMENT 1970-71

66

	COLLEGE			
Laboratory	Algonquin			
Landscape/Hortic.	Cambrian Sudbury			
Marine Eng. Cadet	Cambrian North Bay			
Medical Lab./Bio- Sciences	Cambrian S.S. Marie			
Navigation Officer Cadet	Centennial			
Orthotic/ Prosthetic	Conestoga			
Physics/ Science Lab.	Confederation			
Radiotherapy (X-ray)	Durham			
Survey	Fanshawe			
Telecommunications	George Brown			
Textiles	Georgian			
TV/ETV	Humber			
Welding & Fabricating	Lambton			
Welding Specialist	Loyalist			
	Mohawk			
	Niagara			
	Northern Porcupine			
	Northern Kirkland Lk.			
	Northern Haileybury			
	St. Clair			
	St. Lawrence			
	Seneca			
	Sheridan			
	S.S. Fleming			
	TOTAL			
	53	153		
		101		
		21		
		21		
		22		
		16		
		16		
		33		
		13		
		275		
		3		
		41		
		41		
		61		
		4		
		11		
		11		

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

COLLEGE		TOTAL	
VISUAL AND CREATIVE ARTS			
Animation	Algonquin		
Commercial Arts and Design	Cambrian Sudbury		
Creative Arts	Cambrian North Bay		
Design Arts	Cambrian S.S. Marie		
Fashion	Centennial		
Fine Arts	Conestoga		
Industrial Design	Confederation		
Interior Design	Durham		
Music	Fanshawe		
Photographic/Cine Arts	George Brown		
Radio and T.V. Arts	Georgian		
Screen Printing/ Graphic Design	Humber		
Theatre Arts	Lambton		
	Loyalist		
	Mohawk		
	Niagara		
	Northern Porcupine		
	Northern Kirkland Lk.		
	Northern Haileybury		
	St. Clair		
	St. Lawrence		
	Seneca		
	Sheridan		
	S.S. Fleming		

## COLLEGES OF APPLIED ARTS AND TECHNOLOGY

PROGRAM ENROLMENT 1970-71

3. The difference between sub-totals and totals is the result of a lack of program identification information in the data base for some students.

### C. Analysis of Program Enrolments

Table IV-2 provides a summary of the number of programs offered at each college and the total enrolment in each college. The 20 Colleges of Applied Arts and Technology are offering a total of 640 programs for an average of 26.7 programs for each college. (The main campuses for Cambrian and Northern College are being counted separately). The average program enrolment is 46.

Table IV-3 gives a better view of the average enrolment figures. The fact that there are a few programs with very large enrolments results in an average which is fairly meaningless. Table IV-3 shows that there are 222 programs with an enrolment of less than 20 students, 180 programs with enrolment between 21 and 40 students, 110 programs with an enrolment of 61 to 80 students and 80 programs with enrolment of over 80 students. Only total program enrolment statistics are given here. If these figures were broken out by the various years within the programs then the picture would look slightly different. In other words, the 223 programs with enrolment of less than 20 students are all two-or three-year programs. This means that in any one year of a program there may be fewer than 10 students. Since the colleges have been operating for only a few years, it is to be expected that program enrolments are rather low. It also means that there is considerable potential for achieving some economies of scale as programs are filled out to the capacity level. In many cases

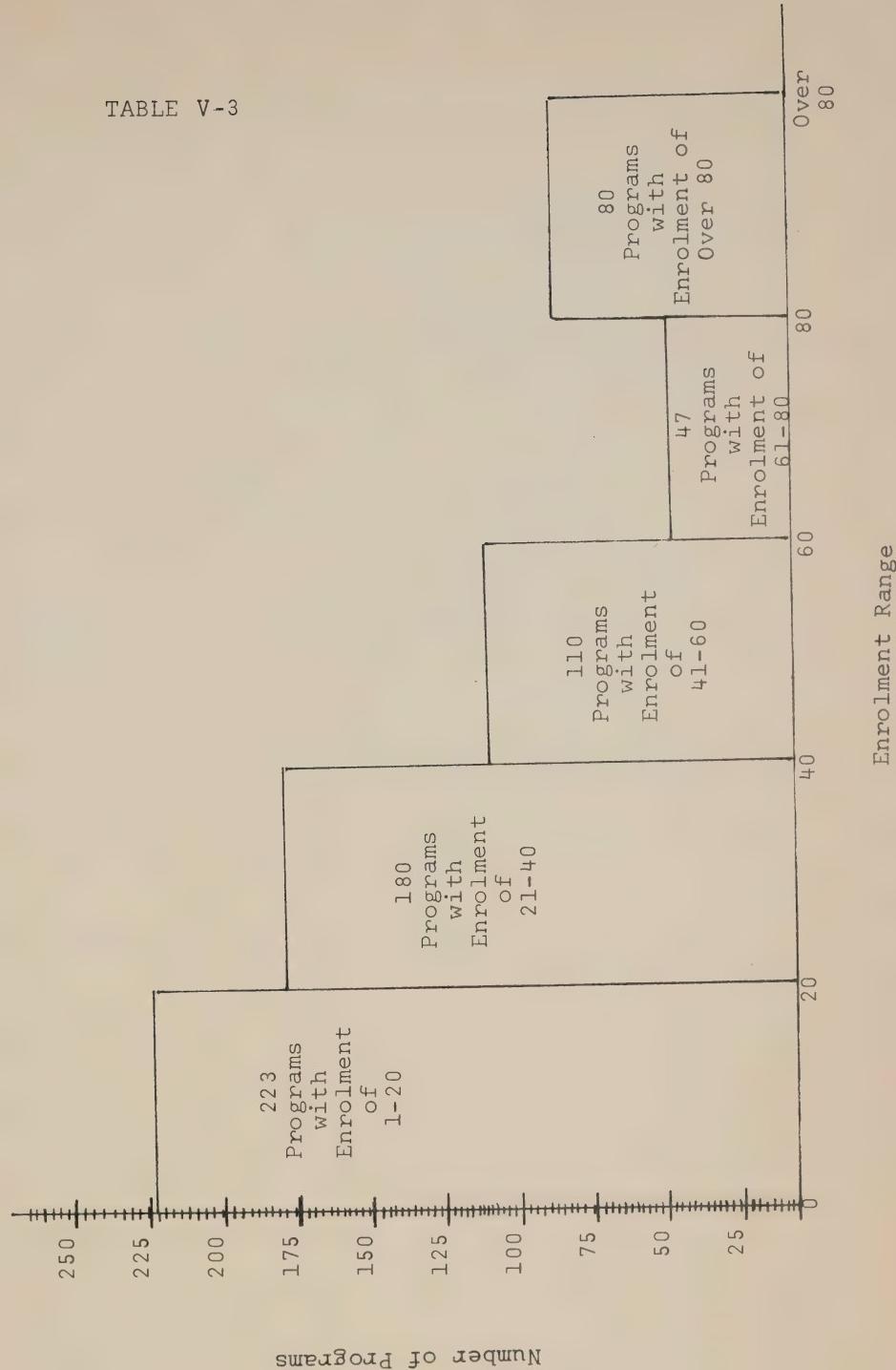
enrolment in courses could be doubled without putting any additional strain on the resource requirements of the particular college. For example, one teaching master may currently be teaching a class of 10 students of one program. In the next few years enrolment in that program could double to 20 students. That same master could then be teaching a class of 20 students, thereby significantly reducing the cost per student.

TABLE V-2

COMMUNITY COLLEGES  
OF APPLIED ARTS AND TECHNOLOGY  
AVERAGE PROGRAM ENROLMENT 1970-71

College	Number of Programs Offered	Total Enrolment	Average Enrolment per Program
Algonquin	43	3,819	89
Cambrian/ Sudbury	26	727	28
North Bay	20	503	25
Sault St. Marie	20	721	36
Centennial	39	1,823	47
Conestoga	28	1,172	42
Confederation	29	798	28
Durham	26	582	22
Fanshawe	42	1,976	47
George Brown	31	804	26
Georgian	19	564	30
Humber	45	2,126	47
Lambton	16	502	31
Loyalist	26	525	20
Mohawk	31	2,369	76
Niagara	40	1,403	35
Northern/ Porcupine	14	199	14
Kirkland Lake	9	373	41
Haileybury	2	156	78
St. Clair	15	1,799	120
St. Lawrence	28	1,546	55
Seneca	38	2,119	56
Sheridan	29	1,721	59
S.S. Fleming	24	1,173	49
TOTAL	640	29,500	
Average	26.7	1,129.2	46

1970-71

Number of Programs by Enrolment Range

It should be noted that there is not a necessary relationship between the number of programs and the number of course offerings at a college. In some cases two students enrolled in different programs may be taking the exact same courses for 80 per cent of the time. The distinction in programs would come in the different courses they are taking 20 per cent of the time. In other cases, the reverse is true. For example, students enrolled in the Business Administration Program and the students enrolled in the Hotel Management Program may all be required to take Introductory Accounting. Some colleges will insist on offering two separate courses in Introductory Accounting and thus keep the students from the two programs apart at all times. Such duplication of courses is often uneconomical, especially if there are low enrolments in the two programs. Whether the additional cost is worth the possible additional benefit is impossible to say without further investigation.

It is important to realize that in some cases program enrolments are likely to remain small even though total college enrolment may increase significantly. A number of colleges have imposed definite enrolment limits on certain programs. These limits are imposed in view of the job opportunity situation in the community for graduates from certain programs. For example, there may be a definite limit to the number of legal or medical secretaries that will be able to find employment in the community. With the aid of local advisory committees, the

colleges conduct community surveys of job opportunities in a specific area before offering a particular program. Often the result of such surveys indicates that there is a definite need for trained people in this or that area but that the need is strictly limited. Most of the colleges have taken the position that it is highly undesirable to provide access to many students to programs where the job opportunities for graduates from those programs are few.

#### D. Competitive Program Offerings

Table V-2 indicates that the 20 community colleges offered a total of 640 programs. However, when these programs are examined in detail it can be seen that there are only 134 unique programs. This means that each unique program is offered on the average by at least four or five colleges. This brings up the question of the necessity of duplicating program offerings in the various community colleges.

Because of the wide geographic distribution of the 20 colleges, it is easier to justify the duplication of programs in colleges which are located several hundred miles apart. However, the duplication of programs in colleges situated relatively close bears further examination.

Table V-4 provides a list of all the programs offered by two or more of the five colleges serving the metropolitan Toronto area. The five colleges are: Centennial, George Brown, Humber, Seneca, and Sheridan. A total of 44 programs are

duplicated in two or more of these colleges. The duplication of some of these programs can be easily justified. For example, with the exception of George Brown College, each of the four colleges offer business administration and general business programs which are well enrolled. However, enrolment statistics for other programs do raise some questions:

- should Centennial and George Brown College compete in offering programs in the computer area for only 60 students while Humber and Seneca combined have a total of 450 students in similar programs?
- George Brown College only has 37 students in secretarial programs whereas each of the other four colleges has 100 or more students enrolled in secretarial programs.
- Each of the five colleges offers some type of drafting program. A total of 348 students are enrolled in these programs in metro. Of these 348 only 20 are enrolled at Centennial and these 20 are distributed over three separate drafting programs. Seneca has 42 students, all enrolled in one program. George Brown College has 93 students enrolled in drafting programs--49 in architectural, 42 in electrical, but only 2 in structural drafting.

TABLE V-4

"Competitive" Program Offerings in the five CAATs in the Metropolitan Toronto Area					
Program	Centennial	George Brown	Humber	Seneca	Sheridan
<b>BUSINESS</b>					
1. Accounting	19	55	52	88	
2. Bus. Admin.	148		163	108	126
3. Bus. General	145		83	68	130
	312	55	298	264	256
<b>COMPUTER</b>					
1. Systems Analyst	21			156	26
2. Operator			118		
3. Data Processing	14	14	37	104	34
4. Computer Science		7			
	40	21	155	260	60
<b>MARKETING</b>					
1. Marketing General	42	18	113	131	
2. Retail Marketing	9				
	51	18	113	131	
<b>SECRETARIAL</b>					
1. Secretarial Science	5			19	
2. Secretarial General	54		57	34	58
3. Legal	30	7	52	61	40
4. Medical	12	3	42	30	
5. Technical		27			
	101	37	151	144	98
<b>DRAFTING</b>					
1. Architectural	6	49	40	42	
2. Mechanical	11		21		10
3. Structural	3	2	42		96
4. Electrical			26		
	20	93	87	42	106

TABLE V-4 (Cont'd)

"Competitive" Program Offerings in the Five CAATs in the  
Metropolitan Toronto area

Program	Centennial	George Brown	Humber	Seneca	Sheridan
<b>TECHNOLOGY</b>					
1. Chemical Technology			9	28	39
2. Civil Technology	58		18	81	23
3. Electronic Technician	25		12	81	
4. Industrial Chemistry			27	23	21
5. Mechanical Technician				43	13
6. Tool & Die Design		28	16		
7. Tool & Die Making		16			
8. Gen. Electronics	98	45	3	53	
9. Survey Technician		42	29		
	181	131	114	309	96
<b>APPLIED ARTS</b>					
1. Advertising	30				29
2. Communication Arts	137		8		
3. Communications Media			51	47	
4. Journalism	32		62		32
5. Tourism/Transport			42	29	
6. Early Childhood Ed.	94		66	55	48
7. Law & Security & Admin.			19	100	15
8. Recreation	84		59		
9. Soc. Services Worker	78		53	50	20
10. Community Planning	12				34
11. Hotel/Restaurant Mg't		16	41		63
12. Nursing			65		
13. Ed. Res. Technician			13	22	
14. Fashion Arts	51		58	94	102
15. Industrial Design		33	5		
16. Photo/Cine. Arts			59		106
	518	49	601	397	449
<b>GEN. ART &amp; SCIENCE</b>					
	311		105	19	90

NOTE: The Applied Arts & Technology Branch and the Council of Regents have for some time been aware of the problem of "competitive" programs. They are currently involved in efforts to provide better co-ordination between college advisory committees and the provincial consultative committees. In addition, work is in progress to arrive at standard definitions of programs and courses.

It would appear that sooner or later some type of rationalization of program offerings, in metro area colleges as well as all 20 colleges, is called for. As long as a significant portion of programs offered by the colleges have enrolments of fewer than 10 or 20 students it is difficult to justify these programs on strict economic terms. The review of all program offerings in each college should be done within the context of the comprehensive multi-year plans which are being prepared by the colleges. Only when the Council of Regents is able to look at the program enrolment and cost projections from each college can it arrive at some judgement as to whether program offerings in one or another college should be curtailed. Unfortunately, this co-ordination of program offerings will probably have to take place at the level of the Council of Regents rather than on a voluntary basis at the college level or through the Committee of College Presidents. Experience at the university level indicates that colleges must probably be given some incentive (positive or negative) to rationalize their program offerings.

E. Programs and Emphasis in Other Community College Systems

1. Quebec

The CEGEP programs reflect Quebec's past as well as newer trends now being encouraged by the Ministry of Education. They are still heavily weighted in the classical tradition: some 70 per cent of the students are in two-year transfer programs. As

time passes and further extensions and reforms are made in what was basically a weak vocational education system, and as labour market conditions improve, the CEGEPs will perhaps come to have a greater resemblance to the Ontario colleges. As long as the CEGEPs are presenting the first two years of university-level education, however, they will never be as specialized as the Ontario colleges.

Unlike the Ontario colleges, the CEGEPs have standardized program descriptors and content at least to the course level if not the curriculum content as such. There is central definition of grades, evaluation systems, diplomas, college year, and holidays. Although the system in general exhibits the kind of Gallic centrism one might expect in Quebec, the directorate in the Ministry of Education is encouraging independence and initiative in the improvement process within the CEGEPs.

The province of Quebec also has a Superior Council on Education, which in turn has a Commission of Technical and Vocational Education. It is not quite clear how the Council functions with respect to programs and educational policy. It appears to resemble the Council of Regents in Ontario in certain respects, but likely has broader functions covering the universities as well. Available documentation does not deal well with the Council.

The CEGEPs require all students to take language and literature, philosophy and physical education. The programs for both university transfer and vocational education are built

around a common set of disciplines-- mathematics, sciences, humanities, and applied arts. The programs of the two types of courses are listed below.

Programs leading to University (two years)

Dental surgery	Law
Dietetics and nutrition	Geography
Physical education	History
Medicine	Philosophy
Veterinary medicine	Psychology
Optometry	Education
Pharmacy	Religion and theology
Nursing science	Social science
Agriculture	Social service
Architecture	Business administration
Forestry	Plastic arts
Applied science	Cinema
Pure science	Theatre
	Classical letters
	German
	French
	English
	Italian
	Russian

Programs leading to the Labour Market (three years)

Dental technician	Continuing education
Medical laboratory technician	Food services
Respiratory technician	Social assistance
Radiology technician	Communications technician
Biology laboratory technician	Librarian
Nursing technician	Sports and recreation
Forestry technician	Administrative techniques
Chemical specialist	Medical archivist
Architectural technician	Information
Fisheries technician	Ceramics
Paper technician	Presentation techniques
Civil engineering technician	Interior decoration
Mechanical technician	Photography
Electrical technician	Laboratory photography
Heating technician, construction	Graphics
Marine technician	
Textile technician	
Water purification technician	
Metallurgical technician	
Mining technician	
Aerospace technician	

Not all CEGEP students fall neatly into the transfer or vocational stream of programs. In its literature, the Ministry of Education stresses the value of adults being able to return to school and take both scholarly and skill-oriented courses "enriching their theoretical and technical knowledge, developing their potential, and preparing themselves for the labour market. Continuing education for adults is a significant part of the CEGEP mission, as it is in the Ontario CAAT system.

## 2. Alberta

The Alberta colleges exercise their local autonomy by offering a variety of programs, especially in the vocational area. The universities have imposed a greater degree of uniformity on the transfer sector. The Department of Education co-ordinates the offerings of the two technology institutes. The "system"--if indeed it can be fairly described as one--has a mixed emphasis on transfer programs and vocational training, depending on the institution. Even semester length is a local decision. There is no overall accreditation procedure, and relations between colleges and universities are negotiated on a one-to-one basis.

## 3. Illinois

The Illinois colleges offer more than 100 programs, with options that explode these to more than 700, in occupationally oriented fields. These are divided into eight groups: agriculture, business and commerce, data processing, health and medical, public and social service, secretarial technology, and

trades and crafts, and others. The occupational sector as distinct from college-transfer sector, has been expanding rapidly in the last few years, as the colleges have begun to swing towards terminal post-secondary programs for students who would otherwise not go to college or, if they did, would likely not complete the academic curriculum. The incentive to push these occupational programs has come in part from U.S. studies which have indicated that more than 200,000 technicians will be needed each year, and also the counterpoint observation that many generally trained university graduates in the arts and sciences have not been able to find work. Remedial college-preparatory programs are also listed.

## CHAPTER VI

## DECISION MAKING IN THE CAAT SYSTEM

A. Introduction

The most important aspects of any organization are the systems and procedures used to arrive at decisions regarding the allocation of resources. This is true for small organizations just as it is true for very large organizations such nation states. The parliamentary system in Canada, the congressional system in the United States, or the military dictatorships in some countries have an immediate effect on resource-allocation decisions. In a similar, although less dramatic way, the decisions made in educational institutions are affected by the process. The process determines who is involved in the decision-making process and what aspects are given primary importance.

In the CAAT system those involved in the decision-making process include the Colleges and Universities, the Applied Arts and Technology Branch, the Council of Regents, boards of governors, the president and staff of a college, and the various advisory committees composed of representatives from businesses and industries in the community. The students of the community colleges are not directly or formally involved in decision-making. In this way the Ontario community colleges are different from those in Quebec and in several American jurisdictions.

The decision-making process in the CAAT system may be examined under four general headings: (1) the planning process, (2) the budget process, (3) the program approval process, and (4) the capital project approval process.

B. The Planning Process

A letter from the chairman of the Council of Regents, dated March 1, 1971, advised chairmen of boards of governors of Colleges of Applied Arts and Technology that the Minister of Education had approved the recommendation of the Council of Regents that the colleges prepare, by December 31, 1971, a "five-year plan outlining their program intentions and the financial requirements that result, and that this plan be updated annually." This announcement marked the introduction of a systematic planning process for all the community colleges in line with the overall policy of the Ontario government to introduce a Planning Programming Budgeting system throughout the Ontario public service, Crown corporations, and independent public agencies.

One of the more important elements of a Planning Programming Budgeting system is the annual review and update of a comprehensive multi-year plan. For the colleges this involves the development of five-year enrolment projections by program, projections of physical facilities requirements, projections of staff requirements, and the projection of the operating budget for each fiscal year in the planning period.

A very important aspect of developing a multi-year plan consists of the analysis of alternatives. In order to provide the colleges with an analytical capability, the Applied Arts Technology Branch in co-operation with the community colleges and with outside technical assistance have developed for each college a simulation capability. A set of computer programs has been developed which enables each College of Applied Arts and Technology in Ontario to analyze the implications on staff, space, and financial resources of alternative enrolment patterns, programs, and policies.

In order to assist the colleges in establishing the necessary organizational procedures as rapidly as possible the colleges were provided with a Planning and Budgeting Manual and a set of guidelines for the preparation of the multi-year plan.

The introduction of a systematic planning process and the concurrent development of modern planning techniques using simulation models have put the Ontario colleges in a position to develop meaningful comprehensive multi-year plans based on an explicit analysis of alternatives. It is important that not too much emphasis be placed on the techniques. Obviously, the techniques as such will not lead to better planning or better decisions; they must be seen in the context of the research and analysis that goes into the production of a multi-year plan. Only if the individual college has a thorough understanding of its community and the role it is expected to play in that community, can the college hope to be able to develop adequate

long-term plans. The establishment of consultative committees consisting of representatives of each college's community, in various subject areas, can only help to make the college staff aware of probable developments and patterns of local social and economic development.

The effect of the introduction of a comprehensive and systematic planning system cannot yet be determined. Some colleges have accepted the need for planning with enthusiasm. Other colleges have expressed fears that a greater emphasis on planning may result in some loss of autonomy. It is unquestionable that the introduction of the multi-year planning process has acted as a stimulus in the colleges for a thorough review of the goals and objectives of the CAATs. It is too early to come up with an assessment of the total impact of the Council of Regents' requirement for the production of a multi-year plan.

The multi-year plan will have a consistent format for all the colleges. A province-wide simulation capability is being developed so that the Applied Arts and Technology Branch will be able to evaluate the implications of the multi-year plan of each individual college on the entire system of community colleges and on the province as a whole.

#### C. The Budget Process

The annual operating budgets for the Colleges of Applied Arts and Technology are determined through a formula financing

scheme which is very similar to that of the Ontario universities. The operating grant consists of four elements.

1) Program enrolment is adjusted by i) a weighting factor attached to each program and ii) a factor which reflects the total size of the college. This produces the number of Basic Income Units to which the college is entitled. The value of the Basic Income Unit has been set at \$1,730 for 1971-72 and \$1,765 for 1972-73.

2) A direct grant is made to each college to cover the rental cost of physical facilities.

3) A special allowance is provided to Algonquin College because of its commitment to provide instruction in the French language.

4) All tuition fees collected by the college must be subtracted from the total grant received from the Department of Education.<sup>1</sup>

The fiscal year for the CAATs runs from April 1 to March 31. The operating grant is calculated on the basis of program enrolment as of December 1, when enrolment figures are audited by independent auditors. This date coincides with the date set for Ontario universities.

The cash flow to a college is determined in each spring on the basis of an estimate of what program enrolment will be as of December 1. After December 1 the cash flow is adjusted to

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1. Complete details of the formula financing scheme are given in Appendix A.

coincide with the exact operating grant that a college is entitled to according to its audited enrolment figures.

Operating budgets for non-post-secondary programs are negotiated directly with the Applied Arts and Technology Branch which in turn must negotiate these budgets with the Ontario Department of Labour and the federal Department of Manpower, the sponsors of the retraining and apprenticeship programs.

#### D. The Program Approval Process

New programs are offered by a college when it has demonstrated the need for such new offerings to the Council of Regents. The board of governors is the channel for submission of requests for permission to offer a new program. The Council of Regents lays down a set of criteria: expected enrolment, need for the program in terms of discernible labour market demands, description of academic content, costs of presentation including staff and equipment, and resemblance to programs offered at other colleges. If the new program meets the objectives of the system, will perform a useful service not available to the proposed student body elsewhere, and if the costs are reasonable, the Council of Regents recommends for approval the addition of the program.

Programs have been added to colleges and then not offered when the expected students did not register. In the early history of a college system such as Ontario's, there is a natural tendency to permit the launching of programs with

rather small prospective enrolments, in the expectation that these will grow in future. One of the more complicated issues in this process is the degree to which students should be expected to change their place of residence in order to secure a given course of study. Are the colleges to be "community" colleges or post-secondary institutions with a more "province-wide" mission?

At the moment it is the policy of the Applied Arts and Technology Branch that colleges do not provide residences for their students. The provision of residences, it is felt, would destroy the "community" or "commuter" aspects of the colleges. Table III-4 indicated that 76 per cent of CAAT students who are Ontario residents attend a college in their own community. This means that 24 per cent of students at a college are living in a place other than their own homes. To this number must be added CAAT students who are not Ontario residents. This means that a very significant portion of CAAT students, close to 10,000 in 1970/71, are potential candidates for college residences.

If the CAATs were to become post-secondary institutions with a more "province-wide" mission, certain savings could be effected through a rationalization of program offerings at each college. However, this would result in an increase in the need for residences.

The question regarding the proliferation of program

offerings within each community means the specialization of certain colleges in selected program areas is far from settled.

The following pages provide a detailed description of the program approval process. Appendix B contains the forms used in the program approval process.

COLLEGE OF APPLIED ARTS & TECHNOLOGY  
PROGRAM APPROVAL PROCESS

Tasks	Target Date	Carried Out By
1. Identify community needs for new programs and initiate program proposals.		- citizens - professional organizations - business and industry - labour representatives - college staff
2. Prepare <u>preliminary</u> program proposal briefs with supporting documents, specifying needs, objective, curriculum and resource requirements		ad hoc committee consisting of representatives of the CAAT and sponsoring party
3. Review the <u>preliminary</u> program proposals for approval		CAAT President/Dean
4. Submit <u>preliminary</u> program proposals to the CAATs Branch	June of preceeding year	CAAT President/Chairman of Board of Governors
5. Review the <u>preliminary</u> program proposals, modify, if necessary		CAAT Branch and Prov. Consultative Committees
6. Inform the CAAT on the recommendation of its <u>preliminary</u> program proposals		Director, CAAT Branch
7. Prepare the <u>final</u> program proposals		Local advisory and CAAT staff
8. Review the <u>final</u> program proposals and submit to the Council of Regents		CAAT President/Chairman of Board of Governors
9. Review the <u>final</u> program proposals for recommendations		Provincial Consultative Committee/Council of Regents
10. Submit recommendations for the Minister's approval	Dec. of preceeding year	Minister/Deputy of Universities and Colleges

Tasks	Target Date	Carried Out By
1. Inform the CAAT on the approval of its <u>final</u> program proposals		Director, Applied Arts and Technology Branch
2. Finalize plans for offering the newly approved programs		CAAT Dean/Division Chairmen

### Provincial Consultative Committees

Provincial consultative committees have been established to advise the Applied Arts and Technology Branch and the Council of Regents in connection with the development of programs of instruction in the CAATs. Following is a list of the program areas for which committees have been established.

- Library
- Engineering technology
- Forestry
- Graphic Arts
- Surveying
- Architecture
- Photography
- Food technology
- Medical records
- Educational resources
- Motive power
- Industrial safety fire protection
- Early childhood education
- Social service work
- Child care work
- Industrial design

The committees are composed of representatives from appropriate public and private institutions as well as representatives from the colleges and the Applied Arts and Technology Branch. Additional provincial consultative committees are being established to ensure that each program

area is covered.

The main function of the provincial consultative committees is to review program proposals from the colleges in terms of relevancy of the program and curriculum content in view of labour market conditions and probable trends in social and economic development in the province. Local advisory committees have been established at each college to advise division chairmen in the development of new programs and the design of curriculum content.

#### Program Approval in Other Jurisdictions

##### a) Quebec

A major portion of the CEGEP transfer programs have been inherited from the classical colleges. That system was old and well established, and had a high degree of uniformity in courses and programs at the time of its incorporation in the CEGEP. Under pressure from the directorate in the Ministry of Education, course content and teaching methods are being gradually improved. This has been easier on the vocational side, where the offerings of the precedent institutions were in most cases inadequate, outdated, and regarded as of secondary importance in the academic scheme of things. Hence there has been less resistance to change and improvement on the vocational programs.

The directorate holds program review meetings twice each year, on a discipline basis. CEGEPs send relevant academic officials to these meetings. In addition to the revision of

programs and course content, these meetings cover possible changes in examinations, teaching methods, and ways of evaluating programs. The directorate is trying to encourage the colleges to take the initiative in program development and improvement but maintains surveillance and control of quality of offerings. The division of responsibility and authority does not, however, appear to be clear-cut on this matter, and no doubt varies from one CEGEP to another depending on the traditions and people involved, and their relations with the Ministry of Education.

b) Alberta

As already mentioned, the program definitions are largely settled by the individual colleges in co-operation with one or more universities where relevant. The technical and agricultural schools are more directly influenced by the Departments of Education and Agriculture in the adoption of new programs. But there is no comprehensive system of program control and development as exists under the Council of Regents and the Ontario Department of Education. Alberta in particular does not appear to have any clear-cut labour market or other economic criteria for the establishment of vocational programs in local areas.

E. The Capital Project Approval Process

The approval of capital projects for new buildings is complicated by the need to bring together several different aspects of planning and financing--the perceived needs of the

institution as seen by its president and board, the interpretation of these needs by architects and campus planners, and the application of official rules or notions of how lavishly needs should be met.

The first stage in the process is a conceptualization of the need, compiled by the college and submitted to the Council of Regents for its scrutiny and for submission to the Applied Arts and Technology Branch. In the next stage, architects are asked to prepare plans based on agreed or prescribed planning factors such as number of rooms required, size, type, support facilities, etc. A continuing process of improvement has been underway in the specificity of these guidelines for the designer--partly for reasons of financial control, and partly to ensure that the various colleges are treated fairly in the allocation of provincial construction grants. Without trying to force each college to replicate the facilities of others, departmental officials are attempting to develop more systematic and uniform planning factors which will encourage the maintenance of the individuality of the constituent institutions. A computerized space inventory system and planning model is being used for this purpose.

The following pages outline the capital project approval process in detail. Appendix C contains the forms used in the process.

COLLEGES OF APPLIED ARTS AND TECHNOLOGY  
CAPITAL PROJECT APPROVAL PROCESS

Tasks	Carried Out By
1. Identify college need for development of new physical facilities	CAAT
2. Update college's multi-year Plan	CAAT
3. Complete CAAT form for approval in principle for Campus development	CAAT
4. Submit CAAT form to Applied Arts and Technology Branch	President/Board of Governors
5. Review request for approval in principle	AAT Branch Council of Regents
6. Approve request for approval in principle	Council of Regents Minister of Colleges and Universities
7. Complete CAAT form for approval to a) purchase realty, b) purchase equipment, c) undertake renovations not to exceed \$50,000, c) other.	CAAT
8. Submit CAAT form to Applied Arts and Technology Branch	President/Board of Governors
9. Review capital project request	AAT Branch
10. Approve capital project request	Minister of Education
11. Complete CAAT form for approval of sketch drawings	CAAT
12. Submit to Applied Arts and Technology Branch	President/Board of Governors
13. Review sketch drawings	School Planning and Building Research Section
14. Approve sketch drawings	Minister of Colleges and Universities
15. Complete CAAT form for approval of semi-finished working drawings	CAAT
16. Submit CAAT form to Branch Applied Arts and Technology	President/Board of Governors

17. Review semi-finished mailing drawings	School Planning and Building Research section
18. Approve semi-finished work drawings	Minister of Colleges and Universities
19. Complete CAAT form for approval for construction	CAAT
20. Submit CAAT form to Applied Arts and Technology Branch	President/Board of Governors
21. Review request for approval for construction	School Planning and Building Research Section
22. Approve construction	Minister of Colleges and Universities

## CHAPTER VI

## THE FUTURE OF THE CAATS

A. Enrolment Growth

The future of the CAATs system will in a large measure be determined by the number of students that will be knocking on the doors of individual colleges in the next few years.

Table VI-1 provides a glimpse of that future. According to a study recently finished by Dr. C. Watson and associates of the Ontario Institute for Studies in Education, the student population of the CAATs can be expected to grow from 29,500 in the academic year 1970-71 to approximately 75,000 students in the year 1981 an increase of 150 per cent in the next 10 years.

The projections prepared by Dr. Watson are based on a number of assumptions. First of all, she assumes that first-year male enrolment will increase from 4.4 per cent of the 18-21 age group in 1970 to 6.9 per cent in 1981 and first-year female enrolment will increase from 1.9 per cent of the 18-21 age group in 1971 to 4.7 per cent in 1981. This means that the combined male and female first-year enrolment in the colleges will increase from 3.19 per cent in 1970 to 5.88 per cent in 1981. The projection of a 5.88 per cent participation rate for the 18-21 age group would appear to be a quite reasonable prediction.

It is expected that 35 per cent of the male students will be enrolled in three-year programs, 63 per cent in two-year programs, and 2 per cent in one-year programs.

One of the unknowns for the colleges will be the number of students who will successfully complete various programs.

Table VI-2 provides the actual and projected survival rates for students enrolled in two-and three-year programs.

It should be remembered that academic failure is not the only reason for the premature termination of studies. A great number of students leave before they complete their program because of good employment opportunities. Some students terminate a program because of lack of motivation. The number of students terminating their studies for academic reasons is probably small. Unfortunately, no accurate information on this is available and the above statements strictly reflect the informed judgement of people in the colleges.<sup>1</sup>

It is obvious from Table IV-2 that Dr. Watson expects the survival rates to improve over time to a point where they stabilize at a fairly high level. Whether this is a reasonable assumption is rather difficult to say. However, the assumption must be noted because if the survival rates deteriorate over time, the enrolment projections produced in Table VI-1 obviously would be overstated.

Survival rates are in part influenced by the type of programs that are offered. Some of the programs do not have any significant effect on job opportunities or initial salary. For example, graduates from two-year secretarial programs normally start at the lowest level in a company. There they

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1. Significant data on graduates and withdrawals from the CAATs will become available from the Applied Arts and Technology Branch late in the fall of 1971.

TABLE VI-1

ACTUAL AND PROJECTED FULL-TIME POST-SECONDARY ENROLMENT BY SEX				
Academic Year Beginning		Male	Female	Total
A C T U A L	1967	9,099	2,081	11,180
	1968	14,652	4,388	19,061
	1969	18,213	6,208	24,421
P R O J E C T E D	1970	21,358	8,317	29,675
	1971	24,134	10,224	34,358
	1972	26,708	11,982	38,690
	1973	29,198	13,606	42,804
	1974	31,625	15,344	46,969
	1975	34,006	17,140	51,196
	1976	36,540	19,114	55,654
	1977	38,915	21,054	59,969
	1978	41,237	22,990	64,227
	1979	43,417	24,860	68,227
	1980	45,208	26,545	71,753
	1981	47,018	28,209	76,227

Source: Watson, Cicely et al., "Enrolment in Ontario Colleges of Applied Arts and Technology: Projections to 1981" (To be published by the Ontario Institute for Studies in Education).

TABLE IV-2

YEAR	ACTUAL & PROJECTED SURVIVAL RATES OF MALE AND FEMALE ENROLMENT IN THE CAATS						2 YEAR PROGRAM	
	3 YEAR PROGRAM			Second to Third				
	First to Second	Female	Male	Female	Male	Female		
	%	%	%	%	%	%	%	
A								
C								
T								
U								
A	79.09	85.28	85.35	68.18	63.99	84.72		
L	59.83	60.19	69.87	91.76	66.87	76.46		
	70.00	70.00	75.00	90.00	70.00	75.00		
P	1970	72.50	75.00	77.5	90.00	72.50	80.00	
R	1971	75.00	80.00	80.00	90.00	75.00	85.60	
O	1972	77.50	85.00	80.00	90.00	77.50	85.60	
J	1973	80.00	85.00	80.00	90.00	80.00	85.60	
E	1974	80.00	85.00	80.00	90.00	80.00	85.60	
C	1975	80.00	85.00	80.00	90.00	80.00	85.60	
T	1976	80.00	85.00	80.00	90.00	80.00	85.60	
E	1977	80.00	85.00	80.00	90.00	80.00	85.60	
D	1978	80.00	85.00	80.00	90.00	80.00	85.60	
	1979	80.00	85.00	80.00	90.00	80.00	85.60	
	1980	80.00	85.00	80.00	90.00	80.00	85.60	
	1981	80.00	85.00	80.00	90.00	80.00	85.60	

Source: Watson, Cicely et al., "Enrolment in Ontario CAATS: Projections to 1981."

find that their former classmates who went directly to the labour market upon graduation from Grade XII are now their seniors in terms of pay, work experience, and union ranking. In this type of situation, the graduate from the community college is forced to ask herself questions regarding the utility of attending a community college. It also points out that, for many programs offered at the community colleges, work experience should be integrated at a very early stage with formal studies.

B. Program Structure

Chapter IV described the various program categories of the community colleges. The future of the colleges should be characterized by a further and complete integration of the instructional services provided to the community. Whether the courses are offered to retraining students, apprenticeship students, non-credit part-time students or full-time post-secondary students, the supervision and administration of these various programs should be brought under the divisional chairman in applied arts, business, and technology. Many colleges should, in the future, probably establish a fourth division which would bring together all health-related programs.

One area that the Commission on Post-secondary Education should consider is the question of transfer programs to universities. Some community colleges aspire to become "junior" universities; this could be accomplished by allowing the colleges to offer full-scale transfer programs designed to prepare students for eventual transfer to universities.

Most American community colleges, as well as those in Quebec and Alberta, offer transfer programs, while community colleges in Britain do not. As Eric Ashby noted, "This is a significant difference for it means that the British 'Tech' is not constrained by the requirements of the universities and it can concentrate its attention upon students who do not aspire to bachelors degrees."<sup>2</sup> Community colleges in the United States are very much constrained in their curriculum offerings by the requirements established by the universities. "Some 75 per cent of the students (in U.S.) are enrolled in transfer courses and aspire to enter four year colleges or universities - this pre-occupation with academic work naturally leads to conformity with academic patterns of education and discourages innovation in fields of study not recognized for transfer - this in turn must inevitably depress the status of those who attend community colleges for vocational education."<sup>3</sup> The same phenomenon is already present in the community colleges of Ontario. The post-secondary programs of each institution receive by far the largest amount of the attention of the college administration. In many colleges separate campuses house post-secondary programs or retraining programs. Only a few have post-secondary and retraining students located in the same facilities. At George Brown College, the CAAT which has gone the furthest towards integration, post-secondary and retraining students are frequently found in the same classroom.

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2. Eric Ashby, Any Person, Any Study (New York, McGraw Hill, 1971)

3. Ibid., 11.

The integration of post-secondary and retraining programs at a college is definitely more economical because it avoids unnecessary duplication of individual courses. It enables the college to take advantage of the economics of scale. The cost of a course is usually quite independent of the number of students taking that course. As more and more students are enrolled in the same course, the cost per student decreases.

The integration of post-secondary and retraining programs would hopefully lead to a reduction in some of the social tensions that may be observed to exist between post-secondary and retraining students at some colleges. Essentially, post-secondary students consider themselves to be "superior" to retraining students even though the programs in both areas are often very similar.

Although the social tensions are significant enough to merit mention, they should not be overemphasized. Social tensions may also be found within the post-secondary group. The rivalries that exist between Applied Arts students and Business or Technology students are similar to those found at the university level between Engineering students, Arts students etc.

In England and in Ontario, although the policy of recognizing distinct roles for the community colleges and the universities has come under some criticism, it has resulted in the development of a distinct set of programs that are frankly vocational oriented and aimed at producing experts in many

fields where university education is not required, for example: technologists, technicians, middle-management officers, teachers' aides, and fashion arts experts.

Eric Ashby notes one very important and relevant fact: "It is already known that only 17.9 per cent of the men and 36.5 per cent of the women who enter two year colleges (in the U.S.) do not aspire to degrees. It is known that only about one third of those who do will get into college and it is known that students who go straight to four year colleges are two to three times more likely to graduate than are transfer students of the same ability who do their lower division work in community colleges."<sup>4</sup> This means that only a very small percentage--probably between 10 and 15 per cent--of those students entering transfer programs actually reach their objectives as originally stated. This means that 5 to 90 per cent of the students who do enter transfer programs become drop-outs and thus fail to achieve their objective.

The questions of public policy that must be considered by the Commission on Post-Secondary Education are: Is it desirable or reasonable to hold out the bachelors degree as the implicit or explicit objective of every Ontario high school graduate? Should the Ontario high school graduate be told that university education, although available to all, is not a desirable objective for all? Is a certificate or diploma from a two- or three-year program from a community college in itself a desirable objective for a significant percentage of Ontario's youth?

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4. Ibid.

We suggest only that the policy recommended in 1965 by the Hon. William G. Davis be maintained: "It is not feasible or indeed desirable, that all our graduates of our high schools should go to university. The real needs of a very substantial number of our young people lie elsewhere. We must turn our attention to a new kind of institution that will provide....a type of training which universities are not designed to offer... a beginning has been made by the establishment of the institutes of technology and vocational centres... The committee is therefore recommending the establishment of community colleges to provide these new and alternative programs."<sup>5</sup> It is our opinion that the establishment of transfer programs, whose sole purpose is to prepare students for eventual transfer to universities, would destroy the unique character of the Colleges of Applied Arts and Technology and negate the contribution they are making to this province.

The establishment of transfer programs would lead to an inevitable emphasis being placed by college staff, from teaching masters to presidents, on these programs and a consequent de-emphasis of technical, technological, and retraining programs. The gulf which now exists in many colleges between post-secondary and retraining students would never be bridged. Integration of the post-secondary retraining programs would never be accomplished. The flexibility and the design of the curricula for community college programs would be lost to the universities as university admission standards would dictate the curriculum to be offered by the CAATs. The unique opportunity of the

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5. Basic documents, 11

colleges to develop new approaches to education for a significant portion of our population would be lost. The community colleges would become "junior" universities instead of institutions with a separate and distinct role.

Although the community colleges should not, in our opinion, be allowed under any circumstances to offer transfer programs, this does not mean that students from community colleges should not be allowed to transfer from colleges to universities. However, this should be accomplished through a change in policy in the universities. The universities should be encouraged to assess the admission qualifications of individual students not on a basis of traditionalist concepts of the number of university courses they have completed but on the basis of the sum total of education and work experience that the applicant for advanced standing has accumulated.

One last point should be brought to the attention of the Commission. On page 48 it is shown that 2.4 per cent of full-time post-secondary CAATs students have attended university before entering the community colleges. This means that in fall of 1970, approximately 700 students who had completed all or part of their studies towards a bachelor degree at the university found that their education was insufficient to prepare them for their particular area of interest in the world of business, industry, and government. This is a significant statistic. It indicates that the community colleges are performing a function not performed by the universities by

offering courses in fields where universities have stayed away from. Indeed, as the community colleges become more proficient in providing specialized training in many fields of applied arts and technology, we may witness a trend where an increasing number of university students with bachelor degrees turn to the community colleges for vocationally oriented education. Teachers' colleges and colleges of education can no longer absorb the surplus of general BA students unable to find employment. For many of those, the community colleges provide an avenue through which they can reach positions of economic independence.

If we are allowed to generalize from the above we can see the future role of the CAATs emerge clearer and clearer.

The role of today's universities in Ontario appears to be:

- 1) to provide a comprehensive set of general "liberal arts" programs.
- 2) to conduct basic research to contribute to the fund of human knowledge.
- 3) to provide training programs for careers for which university graduation is a prerequisite, i.e., business, engineering, law, and medicine.

In contrast the role of the Ontario CAATs should be:

- 1) to provide a comprehensive set of applied programs.
- 2) to provide a wide range of educational services as required by the community in which they are located.
- 3) to provide training programs for careers for which university graduation is not a prerequisite.

In this general framework it can be seen that the roles of the universities and the CAATs are distinct but at the same time complementary. The CAATs are oriented towards specific communities. The universities are oriented towards society at large. Universities are to contribute to the basic fund of knowledge. CAATs are to ensure that new knowledge is applied wherever possible. The objective of the university is the pursuit of knowledge for its own sake. The objective of the CAATs is the use of knowledge in the daily life at home and at work.

In many ways the CAATs provide a bridge between education and industry. This is reflected in the programs offered by the CAATs, by the diverse educational background of CAAT students (if we include retraining students, then only 50 per cent of all CAAT students come directly from secondary schools; if we include post-secondary students the percentage is 85) and the diverse background of the CAAT staff (50 per cent Educational, 50 per cent other).

If the CAATs were brought in closer relation to the universities (through the introduction of transfer programs), then, eventually, the character of the CAATs would change significantly: the curriculum would have to change to conform to university standards; a greater importance would be attached to the academic qualifications of staff (this would inevitably lead to higher average salaries, thereby increasing the costs of CAAT education); the emphasis of community

oriented programs would decrease as greater emphasis would be placed on university-type education. It should be clear to the reader that, in our opinion, it is undesirable that the role of the CAATs should be merged with that of the universities.

One further point should be considered by the Commission: the desirability of introducing graduate programs for the CAATs. There are a number of programs in the CAATs for which some type of graduate program might be appropriate. Perhaps the Ryerson Institute should be considered as a possible graduate school of Applied Arts and Technology. The question is raised here as an appropriate subject for further study.

#### C. The Caats and the Universities

In a book entitled Towards 2000 - The Future of Post-secondary Education in Ontario - John Porter et al. state that they "see the structure of educational attainment as being inevitably hierarchical."<sup>6</sup> And further that "every region of the province would have centres where degree work and generalist arts and science courses and appropriate first professional degree courses were available. We think that the existing colleges of applied arts and technology would form the logical basis for such centres in most regions. Technical, technological, and extension courses would continue to be given, with the opportunity for part-time students extended as the need dictates. The effect would be to widen the basis of generalist education and to make all the work in the colleges of applied arts and technology actually and visibly more open-ended."

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6. Porter, J. et al., (Toronto, Towards 2000 - The Future of Post-Secondary Education in Ontario McClelland and Stewart, 1971), 67.

"Those universities that have firmest commitment to advanced and professional work should gradually de-emphasize generalist arts and sciences as selected CAATs become capable of filling that need."

Inevitably, the future role of the CAATs is related to the future roles of the Ontario Universities. The authors of the book Towards 2000 suggest the role of the CAATs is to become the undergraduate school for the Ontario universities. In other words, they suggest that the Ontario colleges of applied arts and technology become community colleges like those in the United States. Operationally this means the introduction of large-scale transfer programs in all of the community colleges. It is our firm opinion that such a course of action would result in the destruction of the unique role of the community colleges today. It is not at all clear that in this technological age the need for generalist education needs to be extended at the cost of the vocation- and technology oriented education provided today by the colleges of Applied Arts and Technology. If enrolment statistics developed by the American Council of Education as reported by Eric Ashby<sup>7</sup> have any application and we think they do, to the Canadian scene then we must expect that fully two-thirds of the students enrolled in transfer programs in the community colleges would never actually transfer to universities. This means that each year between 10,000 to 20,000 students would be dropping out of transfer programs from the community colleges with nothing to

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7. Eric Ashby, Any Person, Any Study (New York, McGraw Hill, 1971)

show but one or two years of a generalist education--and this at a time when large numbers of university graduates with generalist BA degrees are unable to find employment. There is little need to speculate on current employment opportunities for drop-outs from transfer programs.

Although there is a definite need for a greater co-ordination of all aspects of post-secondary education (a need recognized by the Ontario Government by the establishment of the new department of Colleges and Universities), this does not mean that the entire field of post-secondary education must become hierarchical, with community colleges offering programs at the undergraduate level, the existing universities of Ontario offering honours courses and graduate work and, perhaps, only the University of Toronto offering post-doctoral studies etc. A pyramidal structure of post-secondary education would implicitly establish the Ph.D as the one objective for all Ontario high school graduates.

Complete transferability can be achieved through other means. The universities should judge the academic qualifications of applicants for advanced standing, not through a mechanical counting of course credits, but through a rational evaluation of educational and work experiences accumulated by the applicant.<sup>8</sup>

We suggest very strongly that the universities and colleges be administered as two separate and distinct systems,

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8. Perhaps this could be accomplished by combining the responsibility for the assessment of applicants from the registrar's office to panels of professors.

each fulfilling unique roles in the post-secondary education field in Ontario.

D. Administration in the CAATs

1. The Planning Process

As the planning process was only instituted in the spring of 1971, it is too early to make any assessment or suggestions for improvement. The format for the multi-year plan is comprehensive; it includes enrolment projections, space projections, and financial projections. It also includes statements of educational philosophy and objectives. The process through which the multi-year plan is constructed is thorough and comprehensive. The Planning and Budgeting Manual for the CAATs states "Participation of the Board of Governors, Administrators, Faculty and Staff are required for effective planning."<sup>9</sup> The planning process as outlined in the manual ensures that all programs and policies are systematically reviewed each year and encourages the development and analysis alternatives and the efficient allocation of resources.

2. The Formula

The formula approach to budgeting in post-secondary educational institutions in Ontario has advantages and disadvantages which are well known. From the government's point of view, the formula is easy to administer and easy to justify politically. From the college's point of view, the formula facilitates the development of revenue projections.

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9. Systems Research Group, Inc., "CONNECT/CAMPUS Planning and Budgeting Manual" prepared for the Colleges of Applied Arts and Technology, (unpublished).

However, the formula is bound to affect the internal resource allocation process of the colleges: although officials have repeatedly stated that this is not the purpose of the formula the temptation is very strong to apply the formula internally. In other words, profit-and-loss statements are produced for each program. This means an overemphasis of programs that have a favourable weighting factor relative to the actual cost and a de-emphasis of programs that have an unfavourable weighting factor.

It is, therefore, much more important than officially recognized to have a periodic review of all the weighting factors in the formula. This review should be based on a carefully designed program cost analysis in the community colleges. The planning model which the colleges are using to develop the multi-year plan has a capability to project the cost of individual programs for each college several years into the future. The multi-year plan to be submitted to the Council of Regents would include projections of the cost of programs within each weighting category. On the basis of these cost analyses--of projected cost rather than historical cost--the formula could be adjusted to meet the changing needs of the community colleges.

The mission of the community colleges is to provide educational services to all individuals in Ontario who can benefit from these services. Obviously, the community colleges are providing, and will have to continue to provide, a great diversity of educational programs. Some programs will only be

offered for a few years and then drop out of sight permanently as technology advances or social conditions change. Other programs will remain on the standard menu of courses offered by the colleges. Therefore, it is probably inefficient to set up separate funding sources for each new program or idea that comes along in the area of post-secondary or adult education. The establishment of separate funding sources results in a multiplication of bureaucratic procedures, sets of books that have to be maintained, forms to be filled out by the students, reports to be filed with various government agencies, etc. Ultimately, all types of programs can probably be best funded through a formula<sup>10</sup> that is based on the contact hour concept. In other words, for each unit of education provided to a student enrolled in a 30-week program, a two-week program or a 90-week program, an amount could be set. For ease of comprehension, the contact hour loads could be converted to full-time equivalent students. Colleges should be given wide discretion as to the programs that should be applicable for government financing. Periodic review of these programs should be undertaken by the Council of Regents.

### 3. The Fiscal Year

The definition of the fiscal year continues to be an irritant to the community colleges. The April 1 date for the beginning of the fiscal year coincides with that of both the federal and provincial government. However, it is not consistent

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10. That is to say, if the formula approach is to be maintained. A separate study submitted to the Commission by the Systems Research Group deals with alternative methods of financing post-secondary education in Ontario.

with the opening of the academic year. This consistently compounds the difficulty involved in good planning and management. While all academic planning of its very nature must be done in terms of academic years, financial accounts and cost analyses must be performed in terms of fiscal years. It is suggested that the start of the academic and fiscal years for post-secondary education institutions be made to coincide. This, of course, would mean that the conversion from academic years to fiscal years would have to be accomplished within one government branch rather than in 20 separate colleges. Since the cash flow to colleges is largely determined on estimates of enrolment and adjusted later for actual December 1st enrolment, the total cash flow from the government to the colleges could be converted from academic years to fiscal years without major difficulty.

One factor which compounds the difficulty is the fact that the federal government also operates on an April 1 fiscal year and supplies substantial funds towards post-secondary education in various forms. However, although this is perhaps outside of the terms of reference of the Commission on Post-secondary Education in Ontario, suggestions could be made to the federal government that it allow post-secondary educational institutions in Ontario, as well as in other provinces, to operate on a fiscal year that coincided with the academic year.

#### 4. Cost Accounting

At the moment, the colleges are forced to keep accounts and produce financial reports on seven different categories of

programs (described in chapter IV). In section 2 of this chapter it was suggested that the various program categories be integrated on the academic level. It is suggested that the integration also proceed in the financial accounting and cost analysis area for the colleges. Before this can be accomplished, the administration and financing of all post-secondary programs in Ontario should be unified. At the moment, several federal and provincial government departments contribute to the financing of the operations of the CAATs. The transfer of funds from the Department of Social and Family Services to the Applied Arts and Technology Branch for the attendance at the community colleges of several students referred by the Department is nothing but an unnecessary multiplication of red tape. The separate financing of apprenticeship programs for the Department of Labour also results in an unnecessary multiplication of paperwork.

##### 5. The Program and Capital Project Approval Process

The program approval process and the capital project approval process are well-established procedures in the CAATs system. Suggestions for the future in this area are limited. The program approval process and the capital approval process are fairly independent, and a systematic integration of the two might lead to better results. The vehicle for the further integration of these should be the comprehensive multi-year plan presently being developed by the community colleges. The multi-year plan contains both specifications for new programs to be introduced over the five year planning period and

projections of total space requirements as a consequence of expected enrolments in programs. The main value of the planning model for the community colleges is this very integration of the academic program planning process, the physical facilities planning process, and the financial planning process. In the past, these three planning activities have often gone on independently at a college. The financial planners are not involved with physical facility planning, program planning was something that only the academics were involved in. Rarely were financial officers or physical facilities planners involved in the program planning process. The simulation model brings together detailed information on the composition of programs, enrolments, staff requirements, space requirements, and financial requirements. In doing so it provides a comprehensive structure of the physical resources required to operate a community college.

The suggestion, therefore, is that the review of preliminary program proposals and the review of capital project approval requests be based on a thorough analysis of the multi-year plan.

#### 6. Conclusion

In 1965 John Robarts defined the role of the CAATs as the provision of "a type of training which universities are not designed to offer." The CAATs have been very successful in the development of educational programs which provide the Ontario high school graduate with a choice of alternative career objectives. However, this choice should not, and does not,

commit the student to an irrevocable education and employment pattern. The CAATs, through their flexible admission policies, provide opportunities to adults to augment their general education and to learn a new trade or skill.

In the development of the CAAT program structure, emphasis was placed on filling gaps in the total spectrum of post-secondary education. In doing so, the CAATs have increased the number of alternative high school graduates can choose from and, at the same time, filled a definite need for trained personnel in the many and varied areas of Applied Arts and Technology.

The CAATs should be encouraged and enabled to further develop their unique role and contribution to the social and economic development of the people of Ontario.

A FORMULA FOR OPERATING GRANTS TO  
COLLEGES OF APPLIED ARTS AND TECHNOLOGY<sup>1</sup>

Introduction

The concept of equal post-secondary educational opportunity does not imply equal expenditure of public funds for each student. Types of career-oriented programs offered in colleges of applied arts and technology--programs requiring specialized laboratory, studio, or clinical facilities--will be more costly than programs requiring primarily only classroom facilities. In addition, the cost-per-student in a program offered by a small college in a less populated area of the province will be greater than for a similar program in a large urban college where the overhead is distributed over a greater number of students. Nevertheless, the main factor which determines the operating budget of a college of applied arts and technology is the full-time equivalent enrolment.

Formula financing is a mechanism for determining the level of provincial grant required to sustain an approved program in a college of applied arts and technology by suitably modifying full-time enrolment by factors which acknowledge (i) the economies of scale possible as enrolment increases, and (ii) the major variations in unit costs for different types of post-secondary programs.

Advantages

No matter how complex the formula, it is not possible to

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1. Ontario Department of Education, April 27, 1971 (unpublished)

ensure both that the grant exactly matches actual costs, and that all colleges are equally efficient in the spending of operating income. Nor would it be desirable for a formula to attempt to operate at this level of detail. In addition to requiring many man-hours of calculations, a college would not be encouraged to improve efficiency if the formula were automatically adjusted to wipe out the gain. Colleges need budgetary leeway to use their resources to the best advantage. This is possible with the simple formula format proposed. Consequently, the main advantages of the formula are:

1. The government is able to estimate fairly accurately the amount of provincial funds that will be required to support a predicted enrolment,
2. Each college, in turn, can estimate fairly accurately the estimated operating income on which to construct its operating budget,
3. Line-by-line budget reviews with their inevitable arbitrary decisions are not required; hence,
4. All colleges are funded equitably.

#### Operating Income of CAATS

Students attending colleges of applied arts and technology may be divided into two groups: sponsored students and fee-paying students. Sponsored students are mainly those sent by Canada Manpower Centres to adult retraining programs, apprentices sent to the colleges by the Ontario Department of Labour, and individual students sent to the colleges by the Ontario Department of Correctional Services. In these cases,

the operating costs are isolated from the total college operating cost and are paid by the sponsoring agency either directly to the college (apprentices) or indirectly through the Department of Education.

Colleges of applied arts and technology have been assigned a responsibility for (i) meeting the needs of graduates from any secondary school program, apart from those wishing to attend universities; and (ii) meeting the educational needs of adults and out-of-school youth (age 19 or over), whether or not they are secondary school graduates. Within the limits of program offerings and accommodations, applicants with these admission requirements have the right to register in the college or program of their choice on payment of a tuition fee which is recommended by the Council of Regents and approved by the Minister. At present the tuition fee for the normal two-term college year is \$150 for a full-time student. This fee represents less than 10% of the actual operating cost.

Although the educational needs of many adults and out-of-school youth are provided through the programs for sponsored students, the number of adults seeking further education as part-time fee-paying students now exceeds the full-time enrolment. Even though the tuition fee for evening classes is not uniform, the average part-time student pays approximately \$25 for a two-term subject--one-sixth of the tuition fee of a full-time student.

Tuition fees are collected and retained by the colleges.

As noted, tuition fee income accounts for less than 10% of the actual operating cost. Hence, the provincial operating grant formula must generate sufficient income to underwrite the remainder of the operating cost for full-time and part-time fee-paying students only.

#### Computation of Operating Grant

The annual operating grant to a college of applied arts and technology (on behalf of fee-paying students) is made up of four elements:

$$\begin{aligned}\text{Total grant} &= \text{Enrolment formula} \\ &\quad + \text{Rental of Accommodation} \\ &\quad + \text{Special Allowance (if any)} \\ &\quad - \text{Standard Tuition fee income}\end{aligned}$$

The enrolment formula generates the major portion of the total operating grant. Its computation is outlined in later paragraphs. The formula must provide sufficient operating funds to cover long-range operating costs such as routine maintenance and repair of facilities, replacement of worn out and obsolete instructional equipment and furnishings, etc., as well as the usual direct operating costs. Many colleges of applied arts and technology have not, as yet, had to make such long-range type of operating expenditures.

#### Rental of Accommodation

During their early years, colleges of applied arts and technology were required to enrol students before they had an

opportunity to provide suitable permanent accommodation. Some colleges inherited the facilities of former provincial technical institutes. Some were able to acquire sites and erect pre-engineered buildings in a short space of time. Some commenced operation in completely rented temporary facilities. And, more recently, some inherited adult retraining centres with long-term lease-back commitments.

During the 1970-71 fiscal year, rental of accommodation ranged from zero for three colleges to well over half a million dollars for one college. This rental payment is, to some extent, a substitute for repayment of principal and interest on debentures. Consequently, for equity in applying an operating formula to colleges of applied arts and technology, actual annual rental of accommodation must be isolated and added to the formula computation. Colleges will be able to provide accurate rental estimates along with annual enrolment estimates. Adjustments for minor variations between estimated and actual rental charges can be made to operating grants during the following year, after audited statements have been received. Interest payments on any mortgages are also calculated as rental costs.

#### Special Allowances

As in the operating grant structure for universities, there will be special operating costs from time to time that can be accommodated more effectively by special allowances, until such time as there are sufficient data to build them into the formula portion of the grant.

For the 1971-72 fiscal year, only one major Special Allowance is contemplated:

Algonquin CAAT - Bilingual Allowance

Algonquin CAAT is committed to a policy of providing instruction in the French language for a considerable number of its full-time students. This duplication of instruction and printing of all literature in two languages creates incremental operating costs not provided for by the enrolment formula. This cost has been calculated as 6% of the Enrolment Formula amount.

Standard Tuition Fee Income

Although it is possible to adjust numerical constants in the enrolment formula computations to generate net operating costs, the pattern established for the university operating grant formula uses figures which represent total operating costs. Consequently, the net provincial grant consists of formula less income from standard tuition fees. For consistency, the CAAT operating grant formula is established on the same basis.

This pattern has two advantages. It permits comparison among institutions with different standard tuition fees, and it permits changes in tuition fees without alteration of the numerical constants in the enrolment formula.

At present, standard tuition fee for full-time students in

colleges of applied arts and technology is \$150 for a two-term year. Average tuition fees for an evening school course are \$25. Hence, six evening courses represent the same income as a full-time student. The concept of six part-time student-courses equalling one full-time student agrees with the pattern of the university operating grant formula. Hence, definition of full-time equivalent enrolment as full-time enrolment plus one-sixth of the number of part-time student-subjects produces a measure of enrolment which allows direct comparison with university enrolment.

On this basis, standard tuition fee income for a college of applied arts and technology can be calculated by

$$\text{Tuition Fee Income} = \text{F.T.E. enrolment} \times \$150$$

#### Enrolment Formula Computation

The Enrolment Formula has the form;

$$E = k U (W_1 N_1 + W_2 N_2 + W_3 N_3 + W_4 N_4)$$

where E = the Enrolment Formula portion of the total annual operating grant (in \$)

k = Equalizing Factor which compensates for differences in economies of scale among large and small colleges

U = Basic Income Unit (in \$ per FTE student-year - \$1,730. for 1971-72)

W = Weight assigned to a category of programs

N = Number of Full-Time Equivalent students enrolled in the programs in that category.

#### Equalizing Factor

Experience has shown that cost per student in a college diminishes as the enrolment increases until a certain point of

"viability" has been reached. The original university formula recognized this factor by providing an "emerging" university allowance which diminished each year on a time scale basis. However all institutions do not grow at the same rate. Consequently, some colleges in large metropolitan areas should reach a viable enrolment level in a few years. Some colleges in remote areas may never be able to reduce unit costs to the same level.

The university formula now ties this "Equalizing Factor" to enrolment by allowing a university with a 500 basic income unit enrolment twice the income per unit of a university with a weighted enrolment of 4,000 basic income units. Enrolments between these points receive an Equalizing Factor based on a linear relationship. On the logarithmic graph attached, the university Equalizing Factor appears as a curved line joining the two reference points.

Experience in colleges of applied arts and technology and in the provincial technical institutes which preceded them has indicated that the unit costs diminish fairly quickly at first and tend to level out as the college approaches a viable enrolment. The equation that best suits colleges in Southern Ontario is, therefore, a logarithmic equation, which shows up on the attached logarithmic graph as a straight line. The equations of these two Equalizing Factors are:

University:  $k = 1/7(15 - \frac{N_w}{500})$  ( $N_w < 4000$ )

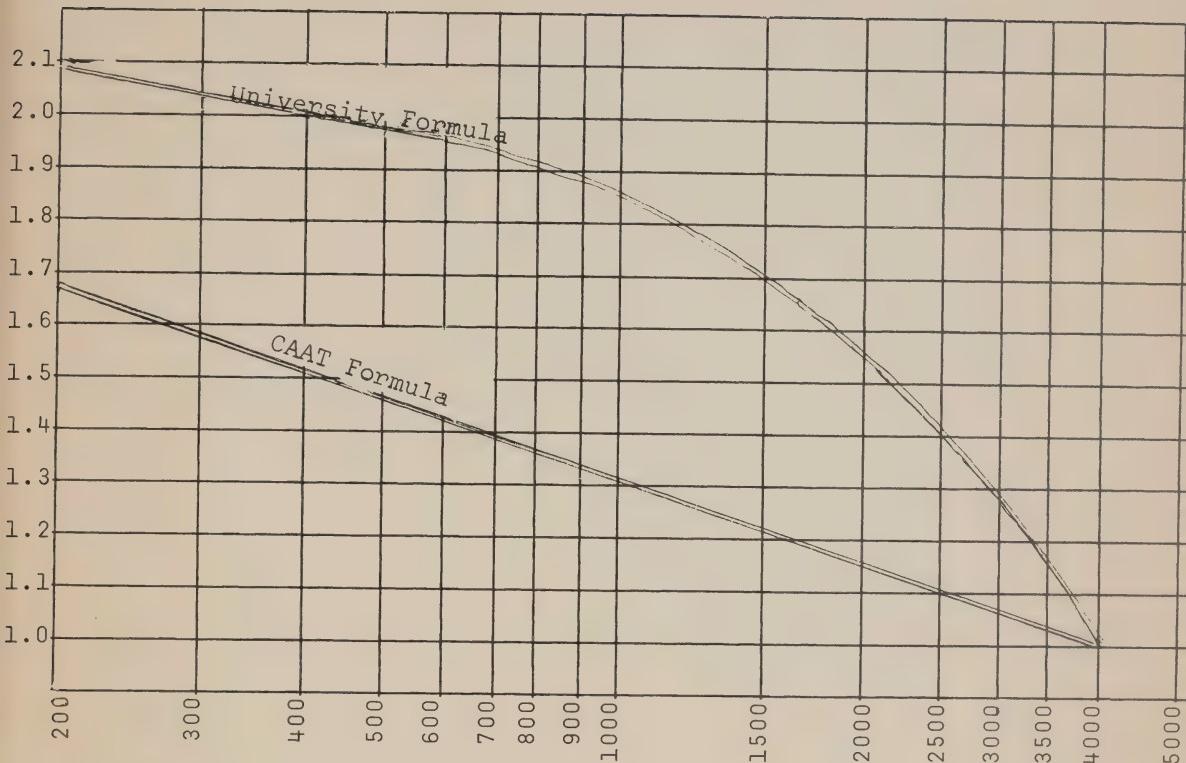
CAAT:  $k = 2.8 - 0.5 \log N_w$  ( $N_w < 4000$ )

where  $N_w = (W_1 N_1 + W_2 N_2 + W_3 N_3 + W_4 N_4)$   
 $=$  full-time equivalent weighted enrolment

For both formulas, the Equalizing Factor remains at unity for all enrolments in excess of 4000 basic income units. The graphs are for illustration only. The factor used in computation involves solution of the above equations to three significant digits.

The three colleges in Northern Ontario, because of the large geographical areas, the sparse population distribution and the higher service costs cannot hope to achieve the same unit costs as the southern colleges. Rather than provide special allowances for their unique "frontier" positions, the three northern colleges, (Cambrian, Confederation and Northern) are computed according to the university Equalizing Factor equation.

In computing the Equalizing Factor for a particular college, the weighting factors have been selected so that "k" will be based on the total weighted enrolment, regardless of the number of campuses which form a single college. The exception to this pattern is the School of Design at Port Credit, which is a separate institution operated by the Board of Governors of the Sheridan College of Applied Arts and Technology. The

Graph of Equalizing FactorsWeighted Full-Time Equivalent EnrolmentCAAT Formula (southern Ontario)

$$k = 2.8 - 0.5 \log N_W \quad (N_W < 4000)$$

University Formula (northern Ontario CAATs)

$$k = 1/7(15 - \frac{N}{500}) \quad (N_W < 4000)$$

Equalizing Factor for the School of Design is calculated separately from that for the remainder of the college.

#### Basic Income Unit

It has become the custom in North America to consider that the typical college student enrolls in September, takes two semesters of instruction, and then takes a four-month summer break. Although many students in colleges of applied arts and technology follow this traditional pattern, they are already becoming a minority. As a college of applied arts and technology develops the flexibility dictated by its objectives, more and more students are attending a semester at a time or as part-time students.

The concept of the two-term full-time student as the basic cost unit is one of the limitations of present approaches to formula financing which will require considerable review during the next few years. Possibly the student-day (per diem rates are used in calculating budgets for sponsored students), or the semester or term (most colleges offer programs during the summer), would be more logical cost units.

However, yearly unit cost figures are the ones currently most widely used for comparison purposes. The university Basic Income Unit is based on the traditional two-term full-time student. Hence, for formula purposes, CAAT Full-Time Equivalent enrolment is calculated in such a manner that the same B.I.U. can be used in both university and CAAT formulas. This concept

of Full-Time Equivalent enrolment is currently accepted throughout North America in reporting enrolment statistics.

For this purpose, full-time and part-time enrolment is audited as of December 1st on the assumption that there will be negligible change in total enrolment during the Spring semester. Enrolment in summer programs during the preceding summer semester is audited at the same time and is added to the total on a pro-rata basis to produce the grand total in Full-Time Equivalent two-term students. In colleges of applied arts and technology, for formula calculations, one full-time student attends classes for thirty weeks in a year, exclusive of examination periods. One evening student attends classes for a minimum of fifty hours, and six such evening students constitute one Full-Time Equivalent student.

#### Category Weights

To be consistent with the principles adopted in the university formulas, and to minimize the problems of auditing the enrolment in the 300 different full-time programs offered by CAATs, the number of categories--for the first two years at least--have been set at the minimum that will encourage a reasonable diversification of program offerings. The following general category descriptions will be amplified by a detailed list of approved programs for actual grant computation purposes. This list will require annual review as more detailed cost analysis data become available.

## CATEGORY 1

WEIGHT = 0.6 =  $W_1$ 

The enrolment in Category 1 is the Full-Time Equivalent enrolment for extension class students. Hence,

$$N_1 = 1/6 \times \text{total of student-subjects in all part-time extension classes.}$$

To avoid a complex auditing procedure of different weights for different types of extension programs, the weight of 0.6 provides partial support for all extension programs. The onus falls on the individual college to arrange a proper mix of career-oriented and recreational extension programs that can be supported in this manner.

## CATEGORY 2

WEIGHT = 1.0 =  $W_2$ 

This category includes all years of Business Programs and all Applied Arts programs which do not require special laboratory or studio facilities.

## CATEGORY 3

WEIGHT = 1.2 =  $W_3$ 

This category includes all years of all Technical and Technological programs, Creative Arts programs which require special studio facilities, and some special Business programs such as Computer Science which require appreciable computer time.

## CATEGORY 4

WEIGHT = 2.0 =  $W_4$ 

This category includes Allied Health programs which require special clinical field experience facilities which are charged to the college.

Computation and Payment of Operating Grants

Due to the requirement for audited statements for government-sponsored students such as apprentices, adult retraining students, etc., colleges of applied arts and technology have elected to retain the April 1 to March 31 fiscal year, rather than the July 1 to June 30 academic year. Nevertheless, the mechanics for cash flow of operating grants to CAATs will be similar to that adopted for the university operating grant formula.

The activity in a college for April, May and June will be essentially the same as for January, February and March. Therefore cash flow for the first quarter of the fiscal year is established on the basis of continuation of average cash flow for the preceding fiscal year. During this quarter, colleges will update enrolment forecasts in detail by program and year. Cash flow for the next two quarters--July to December, inclusive--is then computed on the basis of the enrolment forecasts. Cash flow for the final quarter will be adjusted on the basis of the December 1st audited enrolment.

April 27, 1971

PROGRAM PROPOSAL FOR THE CONSIDERATION  
OF  
THE ONTARIO COUNCIL OF REGENTS<sup>2</sup>

(Please check  
Preliminary  
or  
Final Proposal)

PRELIMINARY PROPOSALS - Items 1 to 9 inclusive and  
FINAL PROPOSALS - Items 1 to 9 inclusive

1. Name of College: \_\_\_\_\_ College of Applied Arts & Technology
2. Program of Instruction: \_\_\_\_\_  
with \*Option(s) (if applicable) \_\_\_\_\_

or Option of an Existing Program:

\* Option \_\_\_\_\_ of the Existing approved Program \_\_\_\_\_

or Change of Name or Duration of an Existing Program:

Program \_\_\_\_\_

\*Proposed Change \_\_\_\_\_

\*NOTE: Name as it will appear on the graduation diploma.

3. Division of College:

Applied Arts \_\_\_\_\_ Business \_\_\_\_\_ Technical\*\* \_\_\_\_\_

Other (specify) \_\_\_\_\_

\*\* If program is intended to meet the requirements of the A.P.E.O. for certification purposes, please check (x) fully \_\_\_\_\_  
Partially \_\_\_\_\_ and include list of subjects.

4. Duration of Program:

Short \_\_\_\_\_ weeks One-year (2 semesters) \_\_\_\_\_

Two-year (4 semesters) \_\_\_\_\_ Three-year (6 semesters) \_\_\_\_\_

5. Minimum Entrance Requirement:

Grade 12 Graduation from any Secondary School Program or  
Equivalent \_\_\_\_\_

and/or Special Requirement (state) \_\_\_\_\_

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<sup>2</sup>. Ontario Council of Regents (unpublished)

## 6. Aims and Objectives:

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## 7. Anticipated Employment Opportunities with supporting data:

Within College Area: \_\_\_\_\_

Outside College Area: \_\_\_\_\_  
\_\_\_\_\_

## 8. Similar Programs in other Colleges: (Include names of program(s) and college(s), and where possible the number of graduates during the past year from these Colleges)

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## 9. Significant Variations (if applicable):

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## 10. Program Cost:

Staff	\$	_____
Supplies	\$	_____
Equipment	\$	_____
Overhead	\$	_____
TOTAL	\$	_____

Additional Information for Final Proposal

11. Advisory Committee - names and titles with area of responsibility  
 (at least five persons representing different organizations  
 expected to be employers of the graduates)  
 - attached as Appendix A

Copy of the minutes of the meeting of the Advisory Committee  
 at which the program was approved  
 - attached as Appendix B

12. Proposed Subjects in each year or semester with division of  
 time for each subject

If a subject is in common with an existing program, identify the  
 subject description as it appears in current college calendar.  
 If subject is new, include a brief description of the content  
 such as it may appear in the college calendar

- attached as Appendix C

13. Additional pertinent information such as surveys of employment  
 opportunities including estimates of the number of opportunities  
 and starting salaries, letters from prospective employers and  
 professional associations or societies in support of the program  
 - attached as Appendix D

14. Signatures

(a)

President of the College

(b)

Chairman of the Board of Governors\*

Date \_\_\_\_\_

(Reference: Section 6(4) of O.Reg.268/65  
 and as in O.Reg.218/70)

\*Copy of minutes of the Board meeting recommending approval of  
 the program may be used in place of Chairman's signature  
 - attached as Appendix E

- NOTE: 1. Enclose five (5) copies in the preliminary stage  
 and fifteen (15) copies in the final stage.
2. Refer to memorandum 70-F-4, dated June 18, 1970,  
 for information relating to new program proposals  
 and a glossary of terms.

Address the proposal to

Mr. N.A. Sisco

Chairman

The Ontario Council of Regents

Current address

- 55 Eglinton Avenue East

TORONTO 315, Ontario

After July 5, 1971

- Mowat Block

Parliament Buildings

TORONTO 4, Ontario.

ONTARIO DEPARTMENT OF EDUCATION<sup>3</sup> CAAT 1

Approval in Principle  
for Campus Development

Mail to: The Director,  
Applied Arts & Technology Branch,  
Ontario Department of Education,  
Toronto, Ontario.

Documents to Accompany  
Submission:  
Educational Specifications  
Master Plan

**Campus Identification:**

Name of College .....

Name of proposed campus and location .....

Name of planning consultant .....

**Development summary for this campus:**

Academic session	19--/19--	19--/19--	19--/19--	19--/19--	19--/19--
Students					
Teaching staff					
Other staff					

**Estimate of Total College and Provincial Investment in Plant Facilities:**

Capital Assets	A Accumulated Investment in Plant Facilities at Original Cost to date	B Total Accumulated Investment at Original Cost of Disposed Plant Assets	C Net Accumulated Investment (A - B)	D Costs of this Proposed Campus Development	E Net Investment in Plant Facilities Including Proposed Campus Development C + D
Land					
Building					
Leasehold Improvements					
Furniture and Equipment					
Parking Lots					
Site Improvements					
Construction in Progress					
Other Capital Plant Assets					
Total					

**Anticipated cash flow:**

Fiscal year	19--/19--	19--/19--	19--/19--	19--/19--	19--/19--
This campus development					
Projects on other campuses under disbursement of funds					
Other anticipated projects					
Total					

<sup>3</sup>. Ontario Department of Education (unpublished)

The information has been completed and approval is requested to begin the preparation of sketch drawings for the first phase of this campus development.

.....  
College President

.....  
Date

.....  
Chairman,  
Board of Governors

.....  
Date

---

The Educational Specification and Master Plan have been approved.

.....  
Chairman,  
Council of Regents.

.....  
Date

The campus development has been approved in principle and you may begin the preparation of sketch drawings for the first phase of this campus development.

.....  
Minister of Education

.....  
Date

---

For Departmental use:

**Approval to:**

- a) Purchase Realty
- b) Purchase Equipment
- c) Undertake Renovations  
not to exceed \$50,000.
- d) Other (explain)

**Mail to:** The Director,  
Applied Arts and Technology Branch,  
Ontario Department of Education,  
Toronto, Ontario.

**Documents to accompany  
this submission:**  
As prescribed in  
Guideline Manual, 1970.

Name of College .....

**Dept. use.**

Name of Campus and Location .....

**Request for the use of funds for the following:**

Program	Funds Requested (gross)
Land Purchase	.....
Building Purchase	.....
Building renovations, renewals not to exceed \$50,000.	.....
Leasehold improvements not to exceed \$50,000.	.....
Site improvements not to exceed \$50,000.	.....
Purchase of Equipment, Furniture, etc.	.....
a. Administrative and Plant Division	.....
b. Academic and Library Division	.....
c. Ancillary Services Division	.....
Mobile Equipment (Plant Division)	.....
Other (explain)	.....
<b>Fees (identify)</b>	.....

Total funds requested

The above information has been completed and appropriate documentation supplied.  
Approval of this capital project is requested.

..... and/or .....  
College President

Date

Chairman,  
Board of Governors

Date

The above capital project is approved.

.....  
Minister of Education

Date

**For Departmental use:**


**Approval of  
Sketch Drawings**

**Mail to:** The Director,  
Applied Arts and Technology Branch,  
Ontario Department of Education,  
Toronto, Ontario.

**Documents to accompany  
this submission:**  
**sketch drawings including  
plans, elevations and sectio-**

**Project Identification:**

Name of College .....  
Name of Campus and Location .....  
Name of Proposed Project .....  
Name of Architect .....

**Space Inventory Summary:**

Total gross square footage of existing buildings on this particular campus:  
Owned by College ..... sq. ft.  
Rented or Leased by College ..... sq. ft.  
Under Construction ..... sq. ft.  
(under CAAT 4 or CAAT 5 authority)

**Project Deployment Summary:**

Number of student stations in this project:  
Post-Secondary Students .....  
Retraining Students .....  
Apprentice Students .....  
Total .....

**Project Analysis by Space Categories:**

	Net Assignable Area in Square Feet in this Project from Sketch Plans	Stations
1. Classroom	..... sq. ft.	..... student station
2. Laboratory	..... sq. ft.	..... student station
3. Shop	..... sq. ft.	..... student station
4. Office	..... sq. ft.	..... office stations
5. Classroom service	..... sq. ft.	
6. Laboratory and shop service	..... sq. ft.	
7. Office service	..... sq. ft.	
8. Library Resource Centre	..... sq. ft.	..... study stations
9. Audio-Visual	..... sq. ft.	..... student station
10. Physical Education	..... sq. ft.	
11. Auditorium	..... sq. ft.	..... fixed seats
12. Lounge	..... sq. ft.	
13. Dining	..... sq. ft.	
14. Health	..... sq. ft.	
15. Computer	..... sq. ft.	
16. Rest Rooms	..... sq. ft.	
17. Custodial	..... sq. ft.	
18. Physical Plant	..... sq. ft.	
19. Circulation	..... sq. ft.	
20. General Service	..... sq. ft.	
21. Inactive	..... sq. ft.	
Total net assignable area	..... sq. ft.	
Construction Area	..... sq. ft.	
Total gross area in this project from sketch plans	..... sq. ft.	

**Gross Cost Breakdown:**

A. Site Development (site service, landscaping, parking, roads, exterior lighting, etc.)	.....
Building	.....
Services cost:	.....
a. Electrical	.....
b. Heating	.....
c. Ventilating & air conditioning	.....
d. Plumbing & drainage	.....
Built-in equipment in contract	.....
	Total A .....
B. Contingency sum (3% of Total A)	Total B .....
C. Loose equipment & furnishing, etc.	.....
a. Administration & plant division	.....
b. Academic & library division	.....
c. Ancillary services division	.....
	Total C .....
D. Fees:	.....
Architect	.....
Engineer consultant	.....
Other consultants (specify)	.....
	Total D .....
Cost expected at date of tendering	.....
A+B+C+D	.....

**Scheduling**

Commence construction	.....
Complete construction	.....
Occupancy	.....

**Anticipated cash flow:**

Fiscal year	19--/19--	19--/19--	19--/19--	19--/19--	19--/19--
This project					
Other projects under disbursement of funds (all campuses)					
Other anticipated projects					
Total					

The above information has been completed and approval is requested:

.....  
College President

Date

.....  
Chairman,  
Board of Governors

Date

The Preliminary estimates have been approved. The preliminary sketch drawings have been reviewed and commented upon. You should now instruct your architect to review any architectural comments with the School Planning and Building Research Section and then start preparation of working drawings.

.....  
Minister of Education

Date

For Departmental use:



## ONTARIO DEPARTMENT OF EDUCATION CAAT 4

Approval of Semi-finished Working Drawings

Mail to: The Director,  
Applied Arts and Technology Branch,  
Ontario Department of Education,  
Toronto, Ontario.

Documents to accompany  
this submission:  
Semi-finished Working Drawing  
Outline Specifications

**Project Identification:**

Name of College .....  
Name of Campus and Location .....  
Name of Proposed Project .....  
Name of Architect .....

Department use: 

Contractual Arrangements  
Stipulated Sum Contracts   
Management Contract

**Space Inventory Summary:**

Total gross square footage of existing buildings on this particular campus:  
Owned by College ..... sq. ft.  
Rented or Leased by College ..... sq. ft.  
Under Construction ..... sq. ft.  
(under CAAT 4 or CAAT 5 authority)

**Project Deployment Summary:**

Number of student stations in this project:  
Post-Secondary Students .....  
Retraining Students .....  
Apprentice Students .....  
Total .....

**Project Analysis by Space Categories:**

	Net Assignable Area in Square Feet in this Project from Working Drawings	Stations
1. Classroom	..... sq. ft.	..... student stations
2. Laboratory	..... sq. ft.	..... student stations
3. Shop	..... sq. ft.	..... student stations
4. Office	..... sq. ft.	..... office stations
5. Classroom service	..... sq. ft.	
6. Laboratory and shop service	..... sq. ft.	
7. Office service	..... sq. ft.	
8. Library Resource Centre	..... sq. ft.	..... study stations
9. Audio-Visual	..... sq. ft.	..... student stations
10. Physical Education	..... sq. ft.	
11. Auditorium	..... sq. ft.	..... fixed seats

12. Lounge	..... sq. ft.
13. Dining	..... sq. ft.
14. Health	..... sq. ft.
15. Computer	..... sq. ft. .... student stations
16. Rest Rooms	..... sq. ft.
17. Custodial	..... sq. ft.
18. Physical Plant	..... sq. ft.
19. Circulation	..... sq. ft.
20. General Service	..... sq. ft.
21. Inactive	..... sq. ft.
Total net assignable area	_____ sq. ft.
Construction Area	..... sq. ft.
Total gross area in this project from Working Drawings	_____ sq. ft.

---

#### Gross Cost Breakdown:

Site Development (site service, landscaping, parking, roads, exterior lighting, etc.)	.....
Building	.....
Service cost:	
a. Electrical	.....
b. Heating	.....
c. Ventilating & air conditioning	.....
d. Plumbing & drainage	.....
Built-in equipment in contract	.....
Total A	.....
Contingency sum (3% of Total A)	Total B
Loose equipment & furnishings, etc.	
a. Administration & plant division	.....
b. Academic & library division	.....
c. Ancillary services division	.....
Total C	.....
Fees:	
Architect	.....
Engineer consultant	.....
Management contractor	.....
Other consultants (specify)	.....
Total D	.....
Cost expected at date of tendering A+B+C+D	_____

**Scheduling:**

Commence construction	.....
Complete construction	.....
Occupancy	.....

**Anticipated cash flow:**

Fiscal year	19--/19--	19--/19--	19--/19--	19--/19--	19--/19--
This project					
Other projects under disbursement of funds (all campuses)					
Other anticipated projects					
Total					

The above information has been completed and approval is requested to move the project forward on a stipulated sum contract  on a management contract

Final working drawings will be completed by ..... and submitted to the Department of Education.

.....  
College President

Date

.....  
Chairman,  
Board of Governors

Date

**Stipulated Sum Contract:**

Semi-finished Working Drawings and estimates have been approved. You should now instruct your architect to finalize working drawings and all necessary contract documents on the basis of these approved drawings. CAAT 5 is to be submitted at close of tendering.

.....  
Minister of Education

Date

**Management Contract:**

You are authorized to award contracts in accordance with these approved semi-finished working drawings for an amount not to exceed \$..... It is understood that the balance of funds for this project is not authorized until CAAT 5 form and required documents have been submitted and approved.

.....  
Minister of Education

Date

**For Departmental use:**



Mail to: The Director,  
Applied Arts and Technology Branch,  
Ontario Department of Education,  
Toronto, Ontario.

Documents to Accompany  
this Submission:  
Working Drawings and  
Specifications  
Equipment List  
Tender Summary

**Project Identification:**

Name of College .....  
Name of Campus and Location .....  
Name of Proposed Project .....  
Name of Architect .....

**Dept. use**   
Stipulated Sum Contract   
Management Contract

**Project Implementation:**

Tender recommended by Board of Governors:

- General Contractor  
 Management Contractor

		Name	Amount
<b>Capital Program for authorization:</b>			
	Amount included in Tenders to date	Amount NOT included in Tenders to date	Total
<b>A. Site Development</b> (site services, landscaping, parking, roads, exterior lighting, etc.)	..... + .....	..... = .....	.....
Building	..... + .....	..... = .....	.....
Services	..... + .....	..... = .....	.....
a. Electrical	..... + .....	..... = .....	.....
b. Heating	..... + .....	..... = .....	.....
c. Ventilating & air conditioning	..... + .....	..... = .....	.....
d. Plumbing & Drainage	..... + .....	..... = .....	.....
Built-in Equipment in Contract	..... + .....	..... = .....	.....
<b>Total A</b>	..... + .....	..... = .....	.....
<b>B. Contingency Sum</b> (3% of Total A)	<b>Total B</b>	..... + .....	..... = .....
<b>C. Loose Equipment &amp; Furnishings, etc.</b>			
a. Administration & Plant Division	..... + .....	..... = .....	.....
b. Academic & Library Division	..... + .....	..... = .....	.....
c. Ancillary Services Division	..... + .....	..... = .....	.....
<b>Total C</b>	..... + .....	..... = .....	.....
<b>D. Fees</b>			
Architect	..... + .....	..... = .....	.....
Engineer	..... + .....	..... = .....	.....
Management Contractor	..... + .....	..... = .....	.....
Other	..... + .....	..... = .....	.....
<b>Total D</b>	..... + .....	..... = .....	.....
Total funds requested for authorization	..... + .....	..... = .....	<input type="checkbox"/>
(A+B+C+D)	..... + .....	..... = .....	<input type="checkbox"/>

**Scheduling:**

Construction commences	.....
Construction completed	.....
Occupancy	.....

---

**Anticipated cash flow:**

Fiscal year	19--/19--	19--/19--	19--/19--	19--/19--	19--/19--
This project					
Other projects under disbursement of funds (all campuses)					
Other anticipated projects					
Total					

---

Fire Marshal approval No. ..... Date .....

---

Approval of the project financial program is requested.

.....  
College President Date ..... Chairman,  
Board of Governors Date

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The above construction program is approved.

..... Minister of Education Date

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**For Departmental use:**

## BIBLIOGRAPHY

1. Ashby, Eric. Any Person, Any Study. New York, McGraw Hill, 1971.
2. Campbell, Gordon. Community Colleges in Canada. Toronto, Ryerson Press, 1971.
3. Ontario Department of Education. Basic Documents. Toronto, June 1967.
4. Porter, J. et al., Towards 2000 - The Future of Post-Secondary Education in Ontario. Toronto, McClelland and Stewart, 1971.
5. Watson, C. et al. Enrolment in Ontario Colleges of Applied Arts and Technology to 1981. (To be published late in 1971 by the Ontario Institute for Studies in Education.)
6. Watson, C. Innovation in Higher Education, Canadian Case Study: New College Systems in Canada. Toronto, OISE, 1971.





